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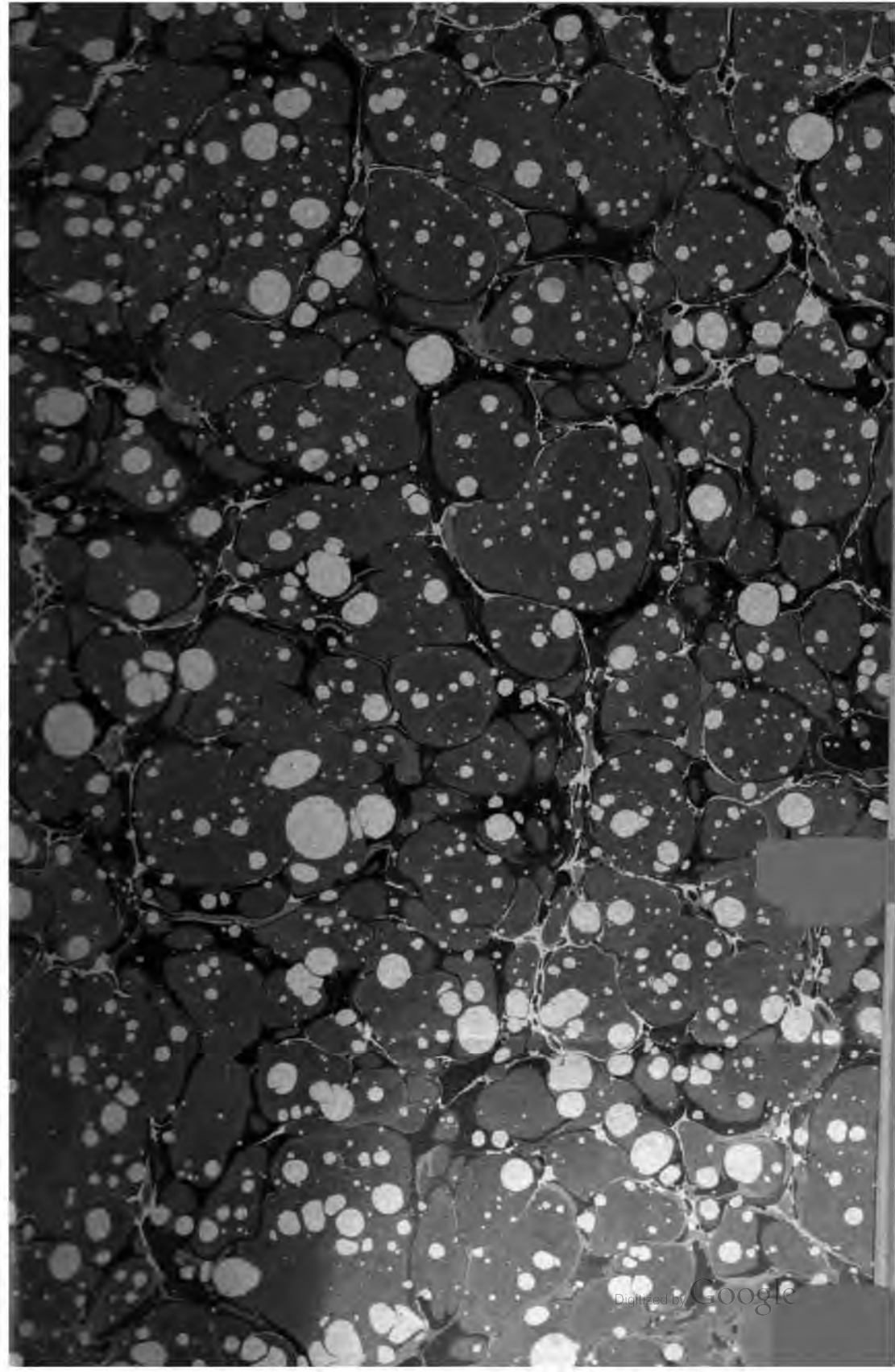
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THE
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OCTOBER, 1888

THE AUSTRIAN ECONOMISTS AND THEIR
VIEW OF VALUE.

THE Ricardian doctrine of value has had its share of the general sifting of cardinal principles which has been at work in England and abroad for the last two generations. No one would now agree with Mill that there is nothing in the laws of value which remains for any future writer to clear up.* In England, the criticisms of Jevons and others have made a deep impression. The positive doctrines of Jevons have not had an equal success, but they have fared somewhat better on the Continent; and, in Austria, a body of doctrines substantially identical with those of Jevons have become the tenets of a strong school, which has made Austria more prominent in economical discussion than she has been for at least a century. There seems to be something of the same intellectual rivalry between Austria and her German neighbors as between America and England.

* *Political Economy*, Book III. chap. i. § 1.

Karl Menger,* Friedrich von Wieser,† and Eugen von Böhm-Bawerk‡ are the leading writers of the school. Their German forerunners are chronicled by Böhm-Bawerk, as their English by Jevons; but, till Jevons and Menger, the doctrines now to be described were hardly before the public in either country.

Jevons seems to have had priority in time, having given his views to the British Association in 1862.§ His complete exposition, however, first appeared with his *Political Economy* in 1871; and in that same year Menger published his *Grundsätze der Volkswirtschaftslehre*, in which he expounded the doctrine of value as Jevons had expounded it.

The Austrian writer seems to have owed nothing to the English.|| Internal evidence alone would show that they were quite unconscious of each other's works. Their starting-points and their emphases are quite different. Jevons is suffering from reaction against Ricardo and J. S. Mill; and he lays most stress on his "General Mathematical Theory of Political Economy," or, in other words, his application of mathematical formulæ to the Benthamite Utilitarianism, upon which Ricardian economics had been largely founded.

Menger, on the other hand, is making stand against a very different enemy, the German historical school, whose methods had departed only too far from Ricardo; and he recurs to a deductive method based (as Ricardo's professed to be) on known principles of nature and

* *Grundsätze der Volkswirtschaftslehre*. 8vo. pp. 299. Vienna, 1871.

† *Ursprung und Hauptgesetze des wirtschaftlichen Werthes*. 8vo. pp. 228. Vienna, 1884.

‡ Two papers in the *Jahrbücher für Nationalökonomie*, entitled *Grundsätze der Theorie des wirtschaftlichen Güterwerthes*: Theil I., *Die Theorie des subjektiven Werthes*, in vol. xiii., N. F. (1886), p. 1; Theil II., *Die Theorie des objektiven Werthes*, *ibid.*, p. 477.

§ His paper is printed in the *Journal of the Statistical Society*, June, 1866, p. 282.

|| Of his followers, Wieser shows most signs of assiduous study of Jevons.

human nature, while following an apparently new path. He and his followers may occasionally make use of mathematical illustrations, but the important point with them is always what we may call (*pace* Böhm-Bawerk) the psychological analysis which is distinctive of their doctrine of value. Menger's somewhat heated controversy with Schmoller on the Methodology of economics need not occupy us here, though it serves to throw light on the mental attitude which led him to his new economical starting-point.*

Turning now to the "National Economy" of Menger, we find him at the outset assigning to economics the investigation of certain principles, fixed independently of individual will, which determine what makes a thing "useful," a "good," and a thing "valuable" to me, and under what conditions an economical "exchange" of goods can take place, as well as under what conditions prices move up and down. Ricardo might possibly have used the same language, but his difference from Menger appears as soon as the principles are examined in detail.

Ricardo has given a theory of value that concerns only commercial values. Like Adam Smith, he identifies "value in use" with utility; and, though he describes it as absolutely essential to "value in exchange," he treats it as a mere preliminary *conditio sine qua non*, which explains no distinctive feature of value in exchange. The specific cause of value is regarded as one of two alternatives:† it is either the scarcity of the article in question or the quantity of labor required to obtain it. There are articles (he says) whose value is derived from scarcity alone, and which have "a value wholly independent of the quantity of labor originally necessary to produce them and varying with the wealth and inclina-

* Compare *Quarterly Journal of Economics* for July, 1887, pp. 503, 504; *Jahrbücher für Nationalökonomie*, viii., N. F. (1884), p. 107 *et seq.*

† His illustrations show that he means one of two alternatives, and not a combination of two elements.

tions of those who are desirous to possess them."* He dismisses this kind of value as curtly as he dismissed value in use, and confines his inquiries to the exchange value of such goods as can be multiplied by labor or (to use a common phrase) are "freely produced."

To Menger and his followers, nearly every step in this proceeding is unsatisfactory. In the first place, they deny † that value in use is convertible with utility. They contend that the two are related as actuality to possibility. Utility means that an article is a possible cause of the satisfaction of my want; value, that it is the indispensable condition on which that satisfaction actually depends. All water and food are useful to a man; but, where both are present in abundance, they have no value for him, not even value in use: it is only when the satisfaction of his hunger *depends* on a particular loaf that that loaf will have value for him. The ordinary symptoms are that in the former case he is willing to waste, but not in the latter. In fact, utility and scarcity, the conjoint conditions of value in exchange in the case of *one* of Ricardo's two species of that phenomenon, are conjoint conditions of that value in use which is antecedent to both of them. Value to me means "importance for my welfare"; ‡ and a thing has no importance for my welfare if, in the first place, it can satisfy no want, and if, in the second, it exists with others like it in such abundance that I cannot consider myself absolutely dependent on it alone for my satisfaction, having all its fellows to serve my turn.

Differing thus at the outset from Ricardo's view of value in use, the Austrian economists take a different

* *Political Economy and Taxation*, chap. i.

† With Schäffle, in the treatise quoted below, *Ethische Seite*, p. 10.

‡ "*Bedeutung*," a phrase made current in this connection by Schäffle, the critic, as well as, in a sense, the forerunner of the Austrian school. See, e.g., his *Ethische Seite der nationalökonomischen Lehre vom Werthe*, Tübingen, 1862. Compare his *Mensch und Gut*, 1861.

view of its place in economical investigation. They believe that, if Ricardo had paid due attention to value in use, or, as they variously call it, "subjective value," or "personal value,"* he would not have found his treatment of value in exchange encumbered with so many difficulties, and he need not have banished scarcity value to the limbo of economical anomalies.

As Jevons, in opposition to Mill, insists that the whole theory of Political Economy must depend on a correct theory of consumption, so the writers of this school contend that the whole theory of value in exchange depends on a correct theory of value in use. "A national economics that leaves out the theory of subjective value is built on air."† One of them, indeed (Wieser), confines his main work entirely to this form of value.

Let us look at the manner in which they rear the building on this foundation. The difference, they say, between goods, or utilities, and economical goods, or values in use, being the difference between mere power to serve us and actual indispensableness to our service, is clearly a question of quantity. How, then, do we explain the paradox that such indispensable things as air and water have usually no value? The answer is that, though indispensable as a total, they are so unlimited in quantity that, in normal circumstances, no particular sample of them has any importance for our welfare. We must avoid the *fallacia sensus compositi et divisi*. Each part by itself is not indispensable. On the other hand, if we decrease the largeness of the whole, we bring the parts nearer and nearer to value till they actually reach it. We must, in all cases, regard ourselves as dealing with concrete wants and quantities, and not with generic or abstract; and we must in each given case be certain what our concrete facts are supposed to be. To a miller,

* "Subjective" value is a phrase of Neumann's adopted by Böhm-Bawerk. Wieser prefers "personal."

† Böhm-Bawerk.

a glass of water from his mill-stream has no value; for, if he has one dashed from his lips, he can get others from the same quarter. But let his total mill-stream be the concrete quantity considered, his total mill-stream has a great value to him, as he quickly shows, if his neighbor tries to cut it off from him. Yet, if mill-streams were as plentiful to him for working his mill as glassfuls of water from his own mill-stream are for quenching his thirst, he would attach as little value to the one as to the other. So air to a diver is to be had in limited quantities, and has value. To the ordinary man, it is to be had in unlimited quantities; and the particular quantity of it which he breathes is not indispensable (for he can get others like it), and has therefore no value. In other words, the considerations applied by Ricardians to one case of value in exchange can be shown to apply to every case of value in use.

In the next place, still confining ourselves to value in use, we ask ourselves what are the degrees of value, and why one thing is recognized as more important to my welfare than another. The psychologists may settle why it is that men identify their interests with material things, and associate the satisfaction of a want (which is the real aim) with the material goods or outward acts (which are only the means of its satisfaction). The economist assumes the fact of identification, and considers the various forms it may take. In doing so, he meets with *contradictions économiques* similar to the one about air and water, and recurring in economical text-books with the same tedious frequency as Cæsar and Caius in formal logic.

Supposing that diamonds and loaves of bread are both important to my welfare, inasmuch as both of them satisfy my wants: are not the two wants very different in kind, and is not the latter so much more important than the former that the loaves have a higher value in use than

the diamonds, although the diamonds have the greater value in exchange? Without dealing with exchange at all at this stage, we can answer (1) that the loaves have not really, except in an absolute dearth, so great a value in use as the diamonds; and yet (2), of the two wants concerned with these two several objects, the want of food is undoubtedly more vital than the want of jewelry. We have therefore to consider in each case not only whether an article is or is not indispensable to the satisfaction of a want, but whether the want in question is high or low in our own particular scale of wants. For every man arranges his wants consciously or unconsciously in a certain scale of importance, and decides that some must be satisfied before others. Not only so, but he also arranges what Jevons would call the "increments" of the satisfaction of each of them in another scale, and judges that the first draught of satisfaction of the highest order of wants must come before any satisfaction of lower orders, while, at the same time, the lower orders may have a claim above the latest increments of the satisfaction of the higher. Food may be prized more highly than tobacco; but the latter may be prized more highly than a fourth meal in the day, pleasant, but not needful for health and energy, and not so pleasant as the pipe. Most wants are satisfied piecemeal, and there is always a point where satisfaction ceases and satiety supervenes. Hence, the scale of degrees acts in combination with the scale of kinds of wants; and both of them are influenced by the individual character and standard of living and aim in life, as well as by general laws of human nature. The two scales may be represented in a diagram, which is taken with some slight alterations from Menger and Böhm-Bawerk,* and can be adapted and amplified at will by the reader:—

* See, e.g., *Jahrbücher*, xiii., N. F., p. 25. Cf. Jevons's *Political Economy*, chap. iii.

<i>Degree.</i>	<i>I. Food.</i>	<i>II. Clothing.</i>	<i>III. Lodging.</i>	<i>IV. Smoking.</i>
First,	Necessary for life.			
Second,	Necessary for health.	First suit, necessary.		
Third,	Agreeable.	Second suit, convenient.	1 room.	
Fourth,	Less keenly agreeable.	Third suit, desirable.	2 rooms.	4 pipes a day.
Fifth,	Still less keenly agreeable.	Fourth suit, not unacceptable.	3 rooms.	8 pipes a day.
Sixth,	Satiety.	Fifth suit, satiety.	4 rooms, satiety.	Satiety.

If the "subject" concerned in the above table were forced to retrench, he would encroach on the lowest lines of the latest columns first, or else the table has been inaccurate. As he was more closely pressed, he would ascend from right to left, till, if he were in desperate straits, all would go rather than the supply of the first degree of Want I. The arithmetic of the table would not bear to be pressed. The difference in degree of importance between one meal when it is the only accessible one and one meal when it is *any* one of five alternate meals is not as 5 to 1, but as infinity to 1. When we draw near to absolute necessity, the increase in importance (as has been noticed by economical observers from Gregory King down) is geometrical rather than arithmetical. Even in the case of what is not a physiological or even a social necessary of life, but is only made a necessary by the conception which a particular individual has formed of the ends of his own particular life, the importance of the object often increases with the decrease in its quantity in far greater than arithmetical proportion. The importance of a single available specimen of a particular Greek coin will to a collector be far more than double the importance of two specimens.

We become conscious of the gradations of our own scale of wants most clearly when we are either adding to our stock of goods or losing part of it, for an addition or subtraction might possibly affect the whole scale of wants, and would certainly affect parts of it. Looking further at our proceedings on such an occasion, we find that most of our stock of goods can be used to satisfy more than one kind of want. We may use corn for our own food, or we may feed our horses with it, or make spirits from it. How are we to judge what is the importance, or, in other words, the value, that is attached to an article having these alternative uses? The answer is (and it brings us to the central point of the theory): We judge of the value a man attaches to an article by the *lowest* use to which he is willing to put it. If he would light the fire with mahogany wood, the mahogany to him has simply a fire-lighting value; or, if he would feed horses with his corn, he values corn at its horse-feeding value. He feeds himself with it, too; but he has enough of it to make any particular quantity of it only of the horse-feeding degree of importance to him. We judge that such and such a use is the *lowest* from the fact that, when the stock of goods is decreased, that use is first forgone. For example, if the supply of corn were cut short, the horses would lose first, or (to take the other case) the mahogany would cease to be used as firewood. The value of an article, therefore, is to be judged in every case by the importance of the least important want that a man would actually satisfy by means of the said article, for only to that want, and not to the others, is that article an indispensable condition of satisfaction. "Subjective value" depends not on utility, but on "final utility" (*Grensnutzen*),—the lowest or least of the actual utilities rendered to us by the valuable article.

The theorists with whom we are dealing explain (one of them, Böhm-Bawerk, with peculiar care) that the

"dependence" is not to be taken as a fact of causation, but as an ascertained fact of interpretation. Looking on any completed act of valuation, we find that, consciously or unconsciously, it involves this regard to the final utility. On the other hand, when the action of an economic agent is viewed, not as completed, but as still in prospect, it is not the minimum, but the maximum, of utility that we suppose to be kept in view by him. The act completed, however, we ask, What is his actually lowest maximum? and that is the final utility now under consideration.

Cases of daily life at once occur to the mind, which this simple theory seems to leave unexplained. Böhm-Bawerk, whose skill in economical casuistry * is well known to readers of his book on *Theories of Interest*,† makes a brave attempt to clear up the difficulties. First of all, he says, we must not suppose the doctrine to mean that the final utility of a given whole is determined by the utility of its least useful part.‡ The value of the *whole* as a whole is determined by the final utility of the *whole*, and the value of the *parts* as such (*i.e.*, not as conjoined, but as separate and alternative pluralities) is determined by the final utility of the *parts* as such. For example, if we ask ourselves what is the value of a skin of water in the desert to a traveller there, whose whole water supply it is, the answer is that the final utility of the whole skin — all or nothing — may be infinite. It may mean life or death to the man. He would not sacrifice it for any consideration. But consider it not as one and indivisible, but as a collection of separate cupfuls of water, then the value of each cupful, as such, is determined by (which means is judged from) the worst use to which the traveller is ever willing

* His own phrase.

† *Kapital und Kapitalzins*. Band I., *Geschichte und Kritik der Kapitalzins-Theorien*. 8vo. pp. 510. Innsbruck, 1884. This volume is at present (August, 1888) in course of being translated into English by Mr. W. Smart, of Glasgow.

‡ An interpretation countenanced by the language of Wieser and Jevons.

to put a cupful. If this be washing, then the value of each part is washing value: whereas the value of the whole as a whole is not washing value, but life or death value. In the second place, we are told that, though the final utility of the parts does not determine the value of the whole, yet it is rarely the case with any particular part that its value is settled by its own final utility; or else we should judge the cupful that quenched thirst in the desert to be infinitely more valuable than the cupful that washed hands or clothes. In all the parts but one, the final utility that fixes their value for them is "an alien utility," — the final utility, not of themselves, but of some other part, which in the above instance is the washing cupful. In the third place, what is true of similar specimens of the same kind of goods (*e.g.*, cupfuls of water) is true of goods that are replaceable at the sacrifice of a substitute of a different kind, whether in the way of exchange or in a more direct way. The final utility determining its value is in that case again "an alien utility," — the utility of the worst used substitute. If I lose my coat and do not replace it, then its final utility has been also its total utility, its worst use was also its best. But, if I replace the lost coat by giving up something else to purchase a new one or to wear *as* a coat, then the coat's value was not its total, but its final utility; and the latter itself is not its own, but the final utility of the means of replacement (money or otherwise).

So far as we have followed our authors, we should infer that final utility was an analysis of the nature rather than of the causes of value. It states the fact itself rather than the reason for the fact. From their own description, value appears as the effect of two causes,—utility and scarcity. The value of a shilling to me depends on its final utility in the sense that you only know its value to me, if you know its final utility to me. In other words, its value means its final utility. There still remains the

question,—*why* its final utility is no more and no less, *why* I would use the shilling for what turns out to be the lowest purpose for which I would ever use it, *why* do I stop so soon, and not go to a lower purpose, or *why* do I not stop sooner, and not go so low? The answer is that the limit is fixed for me by my wants and my resources, taken together and in relation to each other; in other words, by the thing's utility and (in relation to my resources) its scarcity. My shillings are so comparatively abundant that I can satisfy my wants thus far and no farther by means of them. The circumstances of modern industrial society, it is true, introduce complications into these relations. The scarcity of an article in relation to me is determined not only by the extent of my resources, but by the resources and "effective demand" of other people, by the "supply and demand" * of the goods in question over society at large. In ordinary cases, the said "supply and demand" affect the prices of goods, and therefore the extent of the deduction to be made from the individual's store, when he replaces a lost article by a substitute. On the other hand, the Austrian writers justly contend, if it were not for the varying "scales" of wants and the correspondingly varying "subjective" values attached by different people to the same article, exchanges would not take place, and prices would not be settled as they are now. "Objective value in exchange" is the resultant of separate subjective valuations of the competing individuals in a commercial society.

It may confidently be said that, unless the doctrine of "subjective" value is made to throw light on value in exchange, economists would not care to linger over it, as, after all, it is the social relations of human beings in the present industrial system that are of deepest interest to students of economics. Wieser's book, on its first appearance, was severely handled by Dietzel,† because the au-

* Expressions that are explained below.

† See *Jahrbücher*, xi., N. F. (1885), p. 161.

thor did not show the application of his theory to the world with which ordinary economists had always dealt. Professor Böhm-Bawerk has, with great courage and ability, endeavored to remove this reproach from the school to which he belongs; and his treatise on Objective Value must be almost our sole guide in the following exposition.

"Objective value," as he defines it, is by no means identical with value in exchange. Indeed, the latter becomes, from one point of view, a case of subjective and not of objective value. We may regard it as the importance to my welfare of an article exchanged by me instead of consumed by me. This close contact of "objective" with "subjective" value need not surprise any one who remembers the general impossibility of keeping these two philosophical notions, subjectivity and objectivity, out of each other's reach. But, for economical purposes, objective and subjective values may be kept apart without much practical difficulty. Objective value, according to our author, is best defined as simply the power of a commodity (considered out of relation to any particular subject) to produce certain effects. Firewood has heating value, food nourishing value; and (if the particular power conferred is power to exchange for other articles) a commodity may have purchasing value. The said purchasing value or purchasing power is therefore only one species out of many belonging to the genus Objective Value. It is economically the most important, and is practically the only one discussed by Böhm-Bawerk under this head.* He rightly refuses to confine the term "value" to one of the two main kinds, objective and subjective, or to attempt to prove that the two are forms of one and the same kind of value. He accepts both senses, because both are deeply rooted in the common language of men; and he tries to

* Others are, *e.g.*, letting value, hiring value, productive value (productiveness).

avoid ambiguity by means of the distinctive philosophical epithets, subjective and objective. It seems, on the whole, as precise a distinction as can usually be procured in economics, though, to English readers at least, the terminology would be a serious stumbling-block.

Value in exchange being first defined as the power one thing has to fetch others in exchange, the next preliminary definition is that of Price, which is said to be not "value expressed in money," but the actual equivalent goods (whether money or not) given in exchange. The *value* (in exchange) of a coat is thus its power to exchange, say, for two pairs of boots or for £4 in money. The *price* of the coat is, then, the two pairs of boots or the £4 in money. The distinction, it may be admitted, is intelligible, and can be preserved with a very fair amount of consistency. We are, however, at once led by it face to face with the familiar question of economical text-books. How is the price itself explained? The answer is that under free competition of buyers and sellers, and on the supposition that each of them is seeking his own greatest immediate advantage, the price is determined by the subjective value of the article concerned to the least strong* of the actual sellers and the least strong of the actual buyers. The case is analogous to that of subjective value, where the criterion, too, is not the worst of all possible, but the worst of all actual uses. A strong seller, again, is one who attaches comparatively little value to his article, and can therefore come a long way down or let it go for comparatively little. A strong buyer is one who attaches much value to the article he would buy, and can therefore go a long way up or give a great deal for it; and the least strong of the actual sellers and least strong of the actual buyers determine the selling price.

The normal case may be illustrated by the subjoined

* *Tauschfähigkeit*,—strength in exchanging,—a notion first fully treated by Menger, is much used by Böhm-Bawerk.

diagram,* where the articles offered are horses, all supposed of the same quality:—

WOULD-BE BUYERS. (Subjectively)				WOULD-BE SELLERS. (Subjectively)			
A ¹	Values	a horse at	£60	B ¹	Values	his horse at	£20
A ²	"	"	56	B ²	"	"	22
A ³	"	"	52	B ³	"	"	30
A ⁴	"	"	48	B ⁴	"	"	34
A ⁵	"	"	44	B ⁵	"	"	40
A ⁶	"	"	42	B ⁶	"	"	43
A ⁷	"	"	40	B ⁷	"	"	50
A ⁸	"	"	36	B ⁸	"	"	52
A ⁹	"	"	34				
A ¹⁰	"	"	30				

There are only five pairs that can exchange at all with economical advantage, and these are the five strongest buyers and sellers. The price is determined by the valuations of the least strong of these; namely, A⁵ and B⁵. B⁵ can take anything over £40. A⁵ can give anything under £44. The price will be between the two figures.

An objection occurs. If the price is determined by the buyer's estimate of the article's value in use,† and if that, in the normal case of replacement by substitutes, depends on the buyer's estimate of the value in use to him of the means of replacement, does not this mean that the market price depends on the market price? The answer given by our author is as follows: When the buyer comes forward to get his substitute, he carries in his mind a presumption as to the state of the market. He values his coat at a certain low figure, because he has a certain presumption as to the scarcity of coats. He has presumed that substitutes can always be got at that presumed figure. The said presumption has determined his use and abuse of his coat all along; and, till he comes to the market, it

* Cf. Böhm-Bawerk, *Jahrbücher*, xiii., N. F., p. 495.

† It must be said, once for all, that Böhm-Bawerk dislikes this term; but it has been kept as the most familiar English equivalent for the quasi-philosophical "subjective value."

is perfectly rational. But in the market itself he must not presume. He must see for himself how the supply and demand actually stand, and raise or lower his estimate accordingly.

What, then, is the meaning of the "supply and demand"? These are terms for which Böhm-Bawerk has little respect, regarding them as the natural refuge of confused thinkers; but, since they are rooted in language, they must be explained. To explain them, he gives an account of the real reasons why the "subjective valuations" of what he calls the "terminal pair" * in the above diagram are at the height assigned. The said height is a result, *first*, of the numbers of the would-be buyers; *second*, of the degree of value these would-be buyers attach to the article concerned; *third*, of the numbers of would-be sellers; and, *fourth*, of the degree of value *they* attach to the article they would sell. Again, in the "degree of value" so specified is involved a comparison between the article concerned and the other article (say money) which is to constitute the price of it. If a buyer is said to value a horse at £40, this means that one horse has more importance for his welfare than forty sovereigns. It is a comparison of the two, horse and money, that determines the maximum amount of his offer; and, as the same is true, *mutatis mutandis*, of the seller, we must add to the above four reasons two more, the value of the *price* to the buyer and the value of the *price* to the seller.

But from the whole of this statement it is clear that two-thirds of the conditions of objective value depend on a comparison between wants and their means of satisfaction † over society as a whole. The old doctrine that "prices are regulated by the relation of supply and demand" was (we are told) not false, if the terms were un-

* *Grenzpaar*, on the analogy of *Grenznutzen*, which for its part may be translated either final or terminal utility, both terms used by Jevons.

† *Bedarf und Deckung*.

derstood to include not only the number of articles offered and desired, but the various motives influencing the buyers and sellers respectively. It is when demand and supply are both taken as quantities, and the price is said to depend on the suppliers and demanders agreeing to supply and demand the same quantity,* that the formula is wrong; for the height of the price depends not only on the *quantities* offered and demanded, but on the eagerness of the sellers and buyers. So, also, demand is often divided into effective and ineffective; but this is only right if it is remembered that "ineffectiveness" includes want of will as well as want of power. The demanders excluded from the fixing of the price are those that are not prepared to pay a certain price, either because "their poverty and not their will consents" to their withdrawal or because their notions of the subjective value of the article to them do not allow them to pay the price. Intensity of desire, too, can be recognized as a condition of a strong demand only if qualified in a similar way by the double limitation of resources and of standard of living,—in fact, if it is made as much a matter of will-ing as of wish-ing.

It is, however, in regard to supply that the most burning questions arise. Ricardo hardly allowed demand to influence price at all. When we ask on what depends the lowest figure at which the supplier is prepared to sell his ware, we are told by the supporters of the ordinary orthodox doctrine that (in addition to the value, for the seller, of the article he is selling, and the value, for the same seller, of the article, usually money, for which he is offering it) we must take into account the cost of production. But (according to our authors) the connection of cost with price is not to be found in any influence of the former on the decision of the supplier to sell or not to sell at a given minimum price. He will not sell for less than the article

* Mill, Book III. chap. ii. § 3: "The ratio intended is that between the quantity demanded and the quantity supplied." The next paragraph (§ 4) is in greater agreement with Böhm-Bawerk.

is (subjectively) worth to him; but he may and often does sell it below its cost, however reluctantly. The real connection between cost and price is the effect of cost on the *number* of articles produced. The law of cost is not to be opposed to the law of supply and demand, as if they were rivals on equal terms. Cost is only intelligible in relation to supply and demand, and in a very subordinate relation. The law of cost is a particular law of supply: it formulates the conditions of the supply, not of all articles, but of those that are "freely produced."

The discussion has reached a point where it has more than a mere academic interest; and no apology need be made for a somewhat full statement of the application of the doctrine of the Austrian school to the special questions of cost and the means of production. These questions come up first of all (in the writings before us) under the head of Subjective Value, though they are most familiar in ordinary economical discussions in connection with Exchange and Distribution. We are told that, to get a clear view of the situation, we must follow Menger in arranging the means of production according to their nearness to their final products. Let us call these last goods of the "first rank" (say, the finished loaf); goods one step removed, goods of the "second rank" (say, bread a-baking in the oven); another step removed, goods of the "third rank" (the flour in the mill); and so on till we get to the farthest traceable ranks (the elements from which the crops in the field are derived). The instruments used in the various ranks are (we suppose) to be ranked according to their respective goods, though it is materials alone that are mentioned by our author. The water-wheel, as affecting goods of third rank (grain becoming flour), would be itself of third rank. The description given by Menger* of capital as "nothing but a total of

* See *Volkswirtschaftslehre*, pp. 127, seq. But in his article on "Capital" in the *Jahrbücher*, July, 1888, Menger desires to confine the term Capital to

complementary goods of higher rank" (i.e., of a rank remote from the finished article) now becomes intelligible.* But, as to the question of cost, we want to know what determines (a) the subjective and (b) the exchange value of these remote means of production, whether instruments or materials. Now, on the principles of the school, the subjective value of these must mean, as subjective value means in all other cases, that they are an indispensable condition of my satisfaction, and thereby have importance for my welfare. In their case, it is true, they are a condition of a condition; but the indirectness does not alter the fact. "Prædicatum prædicati prædicatum subjecti."

Let the final product be called A, and its means of production G^2 , G^3 , G^4 , in order of remoteness. Let us assume for simplicity that these means of production are concerned only with this one article, and have no collateral or by-products. On what does the subjective value of each member of the series depend? The value of the finished article (or A) is determined by its final utility. As to the article of the second rank (G^2), if it were absent, we should lose the finished article (A) itself, and with it its final utility. In other words, the want satisfied by A depends, not only on A, but on G^2 ; and, as G^2 depends on G^3 , A depends on G^3 , and for a like reason on G^4 . In other words, all the successive and co-operating means of production, through all ranks of the series, are conditions of the final utility of their ultimate product, the article to be consumed. It follows (1) that the value of all members of the series is in principle one and the same; (2) that greatness or smallness of value is fixed, *in the last resort*, by the finished article's final utility; and (3) that it is fixed, *in the first instance*, for each member by the member directly succeeding it, or,

"money devoted to increase of income," and to use "means of production," as the least ambiguous term, in such investigations as the one now before us.

* See Böhm-Bawerk's *Kapital und Kapitalzins*, i. pp. 6, 256, 257.

in other words, produced by it. In practice, men do not refer to the last so much as to the first instance. They often take the former for granted on the strength of the commercial knowledge of themselves or others. A timber merchant, when he is considering what is the value to him of wood for cask staves, does not trouble himself about the ultimate destiny of the staves, but only about the quantity of them he can make out of a given quantity of wood, and for how much, when made, they will sell in the existing state of the market. Yet, if casks went out of use and fell in price, his staves would follow suit,—the value of the means of production thus proving its dependence on the value of the finished product.

On the other hand, it will be said that, as a matter of experience, we find the value of goods rising or falling with their "cost." Now, the cost is nothing but the total of the "productive goods," labor, capital, and any other outlay which must be expended to furnish a certain product. On this, it is to be remarked that "identity of cost and value" is only another phrase for the identity of the value of the means of production with that of the product, without any invidious indication of precedence. Popular language, however, too often suggests that the value of the product is *determined by* the cost of production, whereas the truth (according to our authors) is that the value of the "cost-goods" is determined by the value of the product. Our authors differ both from the "labor theory," which refers all value to cost and all cost to labor, and from the "Dualistic"* or Ricardian theory, which alleges two distinct sources of value (usefulness and cost), and refers to the one whatever it cannot explain by the other. But, as the statement of a mere tendency or approximation, the doctrine that value is identical with cost is, they admit, substantially true in the case of freely produced articles, any discrepancies in their case between cost and

* Böhm-Bawerk, in *Jahrbücher*, xiii., N. F., p. 61.

value being occasioned by the fact that production takes time,* and, between the first step in production and the last result of it, men and things may have altered. The wants of men, the comparative quantities of goods in the market and men's views about them, may change; and then their estimate of the subjective value of the goods employed in production will change also. Such discrepancies are beyond any fixed rule. There is, however, another discrepancy, which is permanent and regular; and it is the discrepancy caused by the mere length of time taken in the conversion of the means of production into the finished product. The value of the means of production in the remote ranks will lag steadily behind the value of the finished product, in proportion to the length of time taken in the passage from the former to the latter. In this kind of discrepancy, Böhm-Bawerk sees the real key to the phenomenon of interest on capital, though he has not as yet given his views to the public at length on this point. But, in the discussion of cost, he asks us to neglect both of the above kinds of discrepancy.

Let us now retract the assumption which we made,† that the given means of production concern only one kind of product. In most cases, the goods of second, third, or fourth rank, in the regress of the economic observer, may be capable of producing not one kind of article only, but a number of alternatives. Iron may be made into nails or ploughshares or fire-grates or fifty other things. The question to be asked is, Which of the alternative products determines the value of the common means of production?

Suppose a sample of G^2 to produce either A or B or C, and the final utility of A to be 100, of B 120, of C 200. The final utility of their common means of production (a sample of G^2) will be the lowest,‡—namely, 100; for,

* Cf. Menger, *Volkswirtschaftslehre*, pp. 40 to 45.

† Above, p. 19.

‡ That is, will be according to the lowest, allowance being made for the discrepancy of time and for the other co-operating elements,—labor, etc. Böhm-Bawerk, *Jahrbücher*, xiii., N. F., p. 538.

if we had only two samples of G^2 and had therefore to lose one of the three,—A, B, and C,—it would be A, as the lowest, that would be sacrificed, and it is therefore *its* existence that depends on a third sample of G^2 . Therefore, a G^2 , when it can be economically used to produce A at all, is in value to us as A, and not as B or C. In the same way, it might be shown that, of several alternative uses of a G^2 , the lowest, or that which leads to the lowest actually valued utility, will determine the value of G^2 . It appears, then, that the value of the least valuable ultimate product (of those products economically produced at all) determines the value of the antecedent means of production from the lowest rank to the highest.

We have next to ask what determines the value of the two other alternative products, B and C. If their own final utility, then their value would be greater than that of their means of production, which has been shown to become 100. But, as a B or a C, if lost, can be replaced by a substitute made from G^2 at the sacrifice of A, the said B and C will (by reasoning given in an earlier stage of this discussion) fall to the value of G^2 ; i.e., to 100 instead of 120 and 200. In fact, to our surprise, we find that, in the case of replaceable alternatives, it is (in all instances but one) the cost that determines the degree of value, after all; and the common identification of cost and price is therefore (in their case only) perfectly justified.* It is an "alien" final utility that determines their value; and the alien utility in this case is that of an article which rules the value, also, of the cost-goods. Their value is therefore the same as that of their cost-goods. Though the road is roundabout, the point reached is the same as in the old Ricardian doctrine. Of freely producible goods, it is really as nearly true to say their cost determines their value as to say the west wind causes the rain.†

* Compare above, p. 11.

† Böhm-Bawerk, *Kapital und Kapitalzins*, i. p. 442.

Let us now apply the doctrine to the value that "dwells not in particular will," namely, to Objective Value in Exchange and to Price (whether in money or in other goods). These last result, as we have seen, from the subjective valuations of the finished product by the consumers; and, in their turn, they determine the demand, which is confronted by the stocks of producers as the supply. The market selling price results from the competition of subjective valuers, as already described.

Now, in each case, the height of the market price determines the height of the *subjective* value in exchange, and the value of the least valuable of the actually sold products determines the subjective value of the means of production. Each producer will subjectively value his means of production—say, iron—according to the market price of the article he makes out of it. One producer will value it, say, at 30*s.*, another at 40*s.*, another at 80*s.* a ton. With these valuations, they go to market. The *extent* of their demand is in proportion to the expected sale of their own goods. The *intensity* of their demand is in proportion to their several valuations above mentioned. No one will give more than the price he hopes to get for his article. The extremes would be, say, 2*s.* and 20*s.* The supply would be the stocks of iron from the mines, which will pass to the strongest buyers at a price between the estimate of the weakest of the said strongest and the estimate of the would-be buyer that just fails to be an actual buyer. The estimates in a great modern market would be so accurate that we may say the price is equal to the estimate of the lowest buyer. Now, as the lowest buyer's estimate depends on the price of his own article, the said article is the limiting article (or *Grenzprodukt*), the least valuable of the uses to which iron can, in given circumstances, be economically put at all. But for all goods above that lowest there is an inducement to makers to increase their supplies; and, the

more this is done, the lower sinks the point where supply and demand balance each other, till at last, in the case of the next lowest sellers, the price goes down to the limiting point, where it ceases to be profitable. This is how all prices tend to be identical with cost in the case of freely producible goods.

Such is, in outline, the theory of the Austrian school. To readers not familiar with its by-paths, it suggests some obstinate questionings. Those discussions of the relation of wants and the subject of wants to the means of satisfaction seem too easily apt (unless confined within rigid limits) to convert economical discussion into psychological. Even Böhm-Bawerk, who considers that the line of demarcation can be easily drawn, does not, in practice, avoid a blending of psychology with economics. A utilitarian psychology and ethics have colored his whole theory, as they colored that of Jevons. He makes the possibility of the doctrine of final utility to depend on the commensurability of pains and pleasures. He makes the individual subject the sole judge of what is his final utility, and of what to him, therefore, is "economical," or the opposite.* But this is very different from the hypothesis of the older economists, whose "economical man" was gifted with enlightened, as distinguished from unenlightened, self-interest. And it is remarkable that, as soon as the Austrian economist reaches their problem (objective value in exchange), he adopts their assumption, and tells us that his theory of exchanges is true of men who are pursuing their own gain with prudence and knowledge. There was surely no need to throw the "rays of utilitarian darkness" into the subject at all. Such a table of wants as is given above (page 8) might be drawn up by philosophers of widely different schools or by ordinary economists with-

* Böhm-Bawerk, *Jahrbücher*, xiii., N. F., pp. 13, 50, etc. Yet he speaks, on page 55, of a "true" as distinguished from an apparent value.

out any philosophy at all. To introduce the philosophical theory that all motives are pleasures or pains, and each individual is the supreme judge of his own ends, is to cast doubt on the existence of any objective truth in the whole matter, and to make the very distinction between economy and waste an incomprehensible riddle. It may be added that, to those who believe that economic processes can and ought to be studied separately from philosophy, even though the economists' results need to be complemented and supplemented by the sublimer study, the very use of philosophical terms for economical facts seems unnecessary and inexpedient.

But, looking now at the general conclusions of the Austrian theorists, we may observe that they involve no "Copernican change of attitude," or, in other words, no complete revolution in economic doctrine. The seeds of the new views may be found in the old economists.* Not to go back to Lauderdale and Malthus, we find, in such passages as the fifteenth chapter of Mill's Third Book, for example, a full acknowledgment of the important part played by "subjective value" in economical processes:—

If one thing [says Mill, speaking of the Measure of Value], either by itself or by what it would purchase, could maintain a laboring man for a day, and another could maintain him for a week, there would be some reason in saying that the one was worth, for ordinary human uses, seven times as much as the other. But this would not measure the worth of the thing to its possessor for his own purposes, which might be greater to any amount, though it could not be less, than the worth of the food which the thing would purchase.

And, in the passage immediately following this (the well-known section on Joint Cost of Production), Mill distinctly speaks of the "law of supply and demand" as "a law anterior to cost of production and more fundamental." In an earlier passage, he had said that "the utility of a

* Professor Böhm-Bawerk (who has been kind enough to read the manuscript of this paper) points out that he has amply acknowledged this in his second paper on Value, *Jahrbücher*, xiii., N. F., p. 502.

thing in the estimation of a purchaser is the extreme limit of its exchange value." (Book III. chap. ii. § 1.)

The idea so common in economical writers, from Lauderdale * down to J. S. Mill, that "wealth" consists of "desirable things limited in quantity," gains its clearest interpretation when wealth is understood as a sum total of things subjectively valuable, in the sense defined by the Austrian school. Nothing but this will save such a saying as, "Though air is not wealth, mankind are much richer by obtaining it gratis," from self-contradiction. |

The service, therefore, that Jevons and the Austrians have rendered to economic theory seems to be, not the first introduction into it of "subjective value" (as if that were a new thing), but the clearer definition of it. "Final utility" is rather a definition of value than an explanation of its causes, and the charm of a new term (itself in need of explanation) seems to have led them to exaggerate its merits at the expense of more vital parts of their own doctrine. Even by their own accounts, the notion of "final utility" throws light rather on the nature than on the causes of value; and, as with wealth, so with value, the causes are our real difficulty. The service of the school is to have shown, not merely that "subjective value" means final utility, but that the causes of subjective value are the causes of all economic value whatever, whether value in use or value in exchange. Jevons himself makes practical acknowledgment of this when, in his *Primer* (1878), he gives the causes of value in great detail, but says nothing at all of "final utility."

Again, it may be doubted whether the Austrian economists have fairly met the challenge made by their critics to show the application of their doctrine to the modern world of exchanges.† Böhm-Bawerk (in his reply to

* On *Public Wealth*, p. 57.

† Emil Sax has applied it to *Taxation* in his *Grundlegung der theoretischen Staatswirtschaft*. See *Quarterly Journal of Economics*, July, 1887, p. 504.

Dietzel's review of Wieser's book)* does not deny their obligation to do this, and the whole of his second treatise (on Objective Value) may be considered an attempt to fulfil the obligation. At the same time, the criticisms passed by him, by Menger, and by Wieser on such views as the "cost theory," and especially the "labor theory," of value, masterly as they often are, are, upon the whole, such as might have been used by economists like Wagner or Cohn, who differ from them on what they treat as the main question. There are signs that the shrewdest of the socialists themselves are ceasing to stake their political and social plans on the too vulnerable theories of Robertus and Marx, and that they would hardly dispute this part of the ground any longer. In any case, such propositions as that of Jevons, that "labor once spent has no influence on the future value of any article," are so far from peculiar to the school that, as Wieser points out, they might be deduced from the reasonings of Mill himself.† The very idea of final utility might perhaps have been suggested by the Ricardian doctrine that Rent is determined by the fertility of the least fertile soil in profitable cultivation, and we might speak of the Ricardian law of rent as the principle of *final fertility*. Its affinity with final utility has, in fact, saved the doctrine of Rent from alteration at the hands of Jevons or the Austrian economists.

In regard to the doctrine of Capital, Interest, Profits, and Wages, Böhm-Bawerk has followed Menger's view of Capital (as above mentioned) rather than the narrower view of Jevons, who confines it exclusively to means of maintaining laborers. The relation of Labor, Wages, and Profits to Value is treated incidentally in the book on *Theories of Interest*. In the second paper on Value,

* "Theory of Subjective Value," *Jahrbücher*, xiii., N. F., p. 77, seq. See, for Dietzel's review, *Jahrbücher*, xi. pp. 161, 162.

† Wieser, pp. 113, 114; Mill, Book II. chap. xvi. § 5. Cf. what is said of Von Thünen's doctrine of Rent by Böhm-Bawerk, *Jahrbücher*, xiii. p. 505.

we are expressly told * that, in the analysis there given, abstraction has been made of labor, tools, and industrial processes. The case, in fact, has been presented abstractly or under simplified conditions; and, if we are to see the whole truth about Objective Value in Exchange, we must recur to the views expressed by the author in the larger work,† where we are told that the amount and duration of the capital advanced (as distinguished from the labor bestowed) in production prevent value from any exact coincidence with cost in any case whatsoever. Ricardo's qualifications of his "labor theory" are described as of undoubted truth and importance. Ricardo rightly saw that the proportions in which fixed and circulating capital enter into cost will seriously affect value in exchange. Now, it would strengthen the position of Professor Böhm-Bawerk and his colleagues very considerably if he could explain, not critically, but positively, the precise effect of these and other modifications on his own theory of value in exchange. We should like to know, for example, what the value of labor is, when considered as a question of the objective value of services, which our author expressly allows to be "goods," ‡ and therefore to be constituents in a complementary group of means of production. Does cost in wages play the same secondary part in objective value in exchange as cost in material goods? Would he subscribe to the doctrine of Jevons and Walker,—that wages are a residuum remaining after deduction of certain fixed elements, and depending essentially, therefore, on the amount of the produce? Would he regard profits as a fixed element at all, or (when distinguished from interest and "wages of superintendence") as entering into cost at all?

* *Jahrbücher*, xiii. p. 538, n. Cf. above, p. 68.

† *Kapital und Kapitalzins*, i. pp. 404–407.

‡ *Rechte und Verhältnisse vom Standpunkte der volkswirtschaftlichen Güterlehre*. 8vo. pp. 158. Innsbruck, 1881. See pp. 31, 57, 61.

The only writer of the school who has gone at any length into the above difficulties is Professor Emil Sax, of Prague, whose book on the economics of the State * includes an account of general economic principles. His views, in the main, are those of Böhm-Bawerk; but he will not allow that "services" are goods, or that labor is a service. When we say that "wages" are paid, we mean (according to Sax) simply that the capitalist purchases the workman's part of the product while the product is still a-making.† Labor is not a commodity; neither are wages "a recompense for the services of the workman." They are "the price of the workman's share of the commodity produced; it is his own product that constitutes his wages." Contract-wages depend on a calculation (made in advance) of the probable price of the product. "Cost of production" means the value of the total of capitalized goods expended in the production, as compared with the value of the product itself when finished. Without value (objective market value in exchange) there would be no trustworthy means of comparing present sacrifice and future return, or (if you like) past sacrifice and present return.‡ The employer, therefore, thinks entirely of the market price which he is likely to get for his finished article. The subjective value to himself of the said article does not come into the calculation; and hence it is that, roughly speaking, like work has like wages. It is otherwise with "services,"—e.g., of professional men,—where the subjective value to the person served is almost the ruling element in the price, and the payments are therefore very various.§ There, too, the payments are made by the served to the

* *Grundlegung der theoretischen Staatswirtschaft*, Vienna, 1887, which should be read in conjunction with the author's *Wesen und Aufgaben der Nationalökonomik*, 1884. For the general drift, see *Quarterly Journal of Economics*, July, 1887, p. 504.

† *Staatswirtschaft*, p. 230, note; cf. 242, 247, 322, 333.

‡ *Ibid.*, pp. 328, 330.

§ *Ibid.*, 242.

server, in goods made by the labor of the served or of his workmen ; but, in hired labor for wages, the worker really receives not another's, but his own product, in the garb of its price.*

The relation of employer and employed is due to the institution of property, enabling me as it does to turn even the objects of immediate consumption, such as food, into means of procuring new goods : it embraces, in this way, " Acquisition " by means of the production of others, in addition to " Production " of my own. There are persons, for example, who want the food, but have no goods at the moment to give for it in exchange. Accordingly, I give them the food on condition that at some future time they shall make and hand over to me other goods for the satisfaction of my future wants. Self-interest demands that the amount of the required future equivalent shall be at least great enough to balance the comparatively greater (subjective) value of the food, as a present, in contrast with a future, means of satisfaction. Capital, therefore, besides becoming the means of production, may without losing its nature be devoted to the present satisfaction of present wants ; that is, the present wants of others, who will then produce for my future benefit. " Means of production " should, strictly speaking, apply only to the capital laid out otherwise than in wages ; but the extension of the phrase to the latter case is justifiable, for, if I get two sacks of corn a year for every one sack that I have given in wages, it is just as if I had myself used one for seed and reaped two at the harvest. As a rule, the workmen having little or no property are obliged to purchase the means of living by selling me in advance their share of the product. Their dependent situation is due, like payment of interest on capital, to the existence of private property.†

Professor Sax does not enter into the further details of

* *Staatswirtschaft*, 246, 247, note ; cf. 242.

† *Ibid.*, pp. 322, 323.

distribution. He refers (in the manner of ordinary economists) to the competition of workmen with each other and to their standard of living as affecting the amount of their share in the product, and (in the manner of the socialism which he disclaims) to "the necessary labor" as an item in the calculations about any production.* But, like his leader Menger, he bids us look for further light to the forthcoming work of Böhm-Bawerk. The Innsbrück Professor is therefore at the present moment the foremost champion of the Austrian School of economics. To procure a favorable hearing, the school must apply its principles without reserve to the problems of distribution as they meet us in modern countries. This is one of the services for which we look to the long promised second volume on *Theories of Interest*.

JAMES BONAR.

* *Staatswirtschaft*, pp. 334, 335.

SOME PRECEDENTS FOLLOWED BY ALEXANDER HAMILTON.

THE system of finance established under Alexander Hamilton's administration of the Treasury of the United States has been represented as a slavish imitation of the English system or as an astonishing piece of original invention, according to the political leanings of the critic. In the following pages, the present writer proposes to consider the apparent origin of some parts of Hamilton's work, and incidentally to observe the light which is thus thrown upon these conflicting allegations of imitation and originality.

It is worth while to remark at the start that, under the early practice of our government, the Secretary of the Treasury occupied a position more nearly like that of an English Chancellor of the Exchequer than the present spirit of Congress would allow. The arrangements for securing his responsibility * were defective; but the responsibility itself, not only for administration, but for guiding the course of legislation, was recognized. The early communications of the Secretary to Congress often presented something like a budget, with a statement of the measures necessary for its working, and any new proposition became a government measure. The method began almost from the first to show its incompatibility with the thorough separation of legislative and executive

* Madison stated the nature of the responsibility as follows: "There will be responsibility in point of reputation, at least a responsibility to the public opinion with respect to his abilities; and supposing there is no personal responsibility, yet we know that men of talents and ability take as much care for the preservation of their reputation as any other species of property of which they are possessed." *Annals of Congress*, June 25, 1789.

functions aimed at in many of our arrangements; but, nevertheless, it made the financial system with which the government set out substantially Hamilton's system, as Congress expected and intended.

The purpose of Congress to throw upon the Secretary the burden of shaping the financial course of the government appears in the first steps taken on the subject of public credit. The act establishing the Treasury Department became a law on the 2d of September, 1789; and the nomination of Hamilton as Secretary went to the Senate on the 11th.* The demand for action "for the revival of public credit and the advancement of the national honor" had already been brought before the House by the petition of public creditors living in Pennsylvania; † and their petition, on the day when the Treasury bill became a law, was referred to a committee, consisting of Madison, Vining, and Boudinot. This committee contented itself with recommending a mere declaratory resolution that provision for the national creditors was necessary, and that the subject should be considered at the next session. When this report came before the House, however, on the 21st of September, a resolution was added and adopted, directing the Secretary of the Treasury to prepare a plan and report it to the House "at its next meeting." That this addition was made as the result of some consultation and settled policy is made probable by the adoption at the same time of a new resolution, directing the Secretary to apply to the executives of the several States for statements of their public debts and the amount of securities of the United States held by them, and to

* As early as May 27, Madison thought that, when the department should be established, the Secretary would be Jay or Hamilton, and that "the latter is, perhaps, best qualified for that species of business"; and June 30 he wrote that "Hamilton is most talked of." *Letters and Writings of Madison*, i. 472, 484.

† See *Annals of Congress*, August 28, 1789. The majority of these petitioners joined the next year in a remonstrance against the funding act. *American State Papers, Finance*, i. 76.

report the information to the House at the next session, plainly contemplating the possible assumption of State debts as a part of the plan of finance to be prepared. Without entering upon this vexed subject, however, it is enough now to point out the specific demand thus made upon Hamilton for a comprehensive scheme, just ten days after his appointment as Secretary. This was the contemporaneous interpretation of the clause in the Treasury act, which declares it to be "the duty of the Secretary of the Treasury to digest and prepare plans for the improvement and management of the revenue and for the support of the public credit."

When Hamilton, in accordance with this resolution, took up the problem of creating public credit, with all that such creation implied, he was barely thirty-two years old. He cannot be said to have had any special training for finance. He had been a reader on economic and financial subjects, had been an interested observer of financial measures, had taken some share in financial discussion, and had undergone the rapid educational process to which practical politics always subject the statesman. In his case, with his marked natural capacity and his good equipment of learning, this process had no doubt carried him far; but his experience had never reached the actual management of affairs on a large scale, as scales were measured in those days, nor the shaping of important financial legislation. He took up his problem, then, as a public man often must, relying upon his general training, observation, and judgment to lead him to a safe conclusion. It appears certain that he relied upon no adviser better versed than himself in practical affairs. He appears to have made a few inquiries of a general kind, not suggestive of his own purposes; * but there is a strong probability that his own mind was made up early as to some

* For example, see his letter to Madison, October 12, 1789, in *Hamilton's Life of Alexander Hamilton*, iv. 60.

leading features of his scheme, and that the friends finally taken into his confidence were not invited to share the responsibility of devising and deciding.*

It is a strong proof of the sobriety of Hamilton's judgment that, in determining his course under these circumstances, he sought for the most part to adapt to his purpose methods and agencies which had been tested by experience; for that is the great characteristic of his Reports on Public Credit and on a National Bank. There is little of the effort to invent or to work out theories leading to some novel expedient, by which an ambitious man so often seeks to exhibit his originality of device and improve his chance for fame. On the contrary, Hamilton seldom shows a disposition to go beyond the range of already tried expedients, except when required to do so by the conditions of his task. His fondness for disquisition perhaps, in a measure, justifies Mr. Adams's reference to his published documents as "essays which, under the name of reports, instilled much sound knowledge, besides some that was not so sound, into the minds of legislature and people."† He had moreover great fertility in ingenious intricacies and fondness for them, as was shown in several of his later and subordinate financial propositions. But, in laying down his general plan for a financial system, he appears to have held his natural tendency in check for the most part, and to have acted with a consciousness that the matter in hand was too grave and its relations too comprehensive to allow him to travel freely beyond the line of tried and known expedients.

* It is to be noticed that Wolcott, although in the Treasury, writes to his father November 3, 1789, "What arrangements are in contemplation with respect to the public debt, I have not been able to learn"; and as late as January 10, 1790, when Hamilton's plan was waiting to be presented to the House, Wolcott seems not to have been well informed as to the rate of interest to be proposed. Gibbs, *Administrations of Washington and Adams*, i. 23, 35.

† Henry Adams, *Life of Albert Gallatin*, 268.

And this explains his steady reliance upon the results of English experience. At that day, the statesman who looked for example to guide him in finance could hardly find it anywhere except in English or Dutch methods. France, after a long course of folly, had declared her bankruptcy in the year in which Hamilton's administration began. Spain could give no lessons except in the squandering of great opportunities and resources. Russia and Austria were both struggling with inconvertible paper and financial discredit and distress. The smaller states of Germany and Italy neither had important results to show nor were much known. And, of the two most familiar and most instructive cases, there can be no doubt that the experience of Holland was in most respects less likely to be applicable to the conditions of the United States than that of England. Unless then the financial organizer were resolved to disregard the lessons to be learned from foreign finance, he must of necessity draw those lessons chiefly from English practice. What Hamilton's favorite study would have been if France had been financially as fortunate as England, we need not inquire. France had not been thus fortunate, and even an Anglophobist could have looked in but one direction under the circumstances.

The features of Hamilton's scheme which we may advantageously compare therefore with the English precedents are his scheme for funding the debt in order to determine and moderate its immediate burden, his plan for a sinking fund, and the charter of the first Bank of the United States. These measures stand together, as those by which the public obligations were to be defined and met, and national and private interests were to be united for mutual support. The assumption of the State debts and the settlement of accounts with the several States also held an important place in the system, but the considerations involved were so special that these measures do not fall within the range of our inquiry. The system of credit

also rested upon the hope of a sufficient provision of revenue; but this Hamilton sought wherever he could find it, and under such limitations in the choice of his measures as made their origin a matter of little significance.

Taking up first in order the plan for funding the domestic debt, proposed by Hamilton in the *Report on Public Credit* of January 9, 1790, we have the measure which was declared to be devised for the purpose of mystifying the public and establishing a perpetual debt in imitation of what was understood to be the English policy. Premising that the Secretary assumed as probable that the interest of money in the United States "will, in five years, fall to five per cent., and in twenty to four," he proposed to fund the heterogeneous mass of securities and claims, which made up the domestic debt, as follows:—

First.—That for every hundred dollars subscribed, payable in the debt (as well interest as principal), the subscriber be entitled, at his option, either

[1] To have two-thirds funded at an annuity or yearly interest of six per cent., redeemable at the pleasure of the government by payment of the principal, and to receive the other third in lands in the Western Territory, at the rate of twenty cents per acre; or,

[2] To have the whole sum funded at an annuity or yearly interest of four per cent., irredeemable by any payment exceeding five dollars per annum, on account both of principal and interest, and to receive, as a compensation for the reduction of interest, fifteen dollars and eighty cents, payable in lands, as in the preceding case; or,

[3] To have sixty-six dollars and two-thirds of a dollar funded immediately at an annuity or yearly interest of six per cent., irredeemable by any payment exceeding four dollars and two-thirds of a dollar per annum, on account both of principal and interest, and to have, at the end of ten years, twenty-six dollars and eighty-eight cents funded at the like interest and rate of redemption; or,

[4] To have an annuity, for the remainder of life, upon the contingency of living to a given age, not less distant than ten years, computing interest at four per cent.; or,

[5] To have an annuity for the remainder of life, upon the contingency of the survivorship of the younger of two persons, computing interest in this case also at four per cent.

In addition to the foregoing loan, payable wholly in the debt, the Secretary would propose that one should be opened for ten millions of dollars on the following plan :

[8] That, for every hundred dollars subscribed, payable one-half in specie and the other half in debt (as well principal as interest), the subscriber be entitled to an annuity or yearly interest of five per cent., irredeemable by any payment exceeding six dollars per annum, on account both of principal and interest.*

No doubt the appearance of great complication is given to this scheme by the ingenious arrangement for leaving to the creditor his choice between several methods of funding, equivalent in value, but having different attractions for the investor. With a domestic money market as yet untried and with public credit still to be created, it may well have appeared dangerous to Hamilton at the end of 1789 to stake his success upon the possible popularity of any single form of investment. Still there can be no doubt that Congress judged wisely in rejecting this part of his scheme and in adopting a method of funding based on his third proposition.† The bolder course of proposing uniform terms of exchange to all the creditors proved to be free from the risk which Hamilton sought to avoid, the form of securities adopted proved to be satisfactory to investors, and the number of classes of new securities to be created was somewhat reduced. The proposition as given above remains a striking instance of Hamilton's chief foible as a financier,—his fondness for ingenious and nicely calculated expedients, sometimes admirable as mathematical *tours de force*, but elaborated beyond the real needs of the occasion.

Taking the first three of Hamilton's propositions, there is little in them to remind us strongly of the English precedents, except the use which is made of variety in the terms of redemption. The English legislation had already made the three per cent. consols and the reduced

* *American State Papers, Finance*, i. 20.

† *Senate Journal*, July 16, 1790.

three per cents. redeemable at par upon a year's notice. The four per cents. had been made irredeemable for ten years, and the fives for thirty. As a refinement upon this variation in time, Hamilton fixed a limit to the rate of redemption, guaranteeing the creditor against payment except by small instalments, instead of securing him against payment for a definite time. This limit upon redemption Hamilton used to increase the weight of his offers, as English financiers had used the limit of years; and Congress adopted it for the first and last time in the Funding Act of 1790,* when they gave the creditor, (1) for his principal two-thirds in six per cents. bearing present interest, and one-third in sixes not bearing interest until 1801, neither series being redeemable except by payments limited to eight per cent. for principal and interest in any one year, and (2) for his interest three per cents. redeemable at pleasure.

Whether Hamilton adopted from any quarter, or indeed maintained at all, a policy of permanent public debt, is a question which it is convenient to postpone for the present. So far as the terms of redemption proposed by him bear upon this point, however, it may be said here that his first proposition was for a security perpetual in the sense in which the larger part of the English funded debt was perpetual, having no fixed time for maturity, but redeemable whenever the government might find redemption convenient,—temporary or perpetual therefore according to the financial strength of the debtor. Of the securities redeemable at a limited rate, described in his second and third propositions, his four per cents. had the longest life secured to them; and these, if redeemed by a series of annual payments of five per cent. for principal and interest, would last for forty-one years from the beginning of the series, calculating the interest at four per cent. for the whole period.

* Act of August 4, 1790, *Statutes at Large*, i. 138.

When we come, however, to Hamilton's fourth and fifth propositions, we have plainly an expedient drawn from the life annuity system, which the English government had used as a method of borrowing at intervals from the time of William III. and which the Dutch government had practised still earlier. Here, again, Congress acted wisely in avoiding a plan better adapted to the habits and wants of an old community than to those of a country just emerging from colonial and frontier life; and the proposition stands as an additional proof of the tentative character of Hamilton's early propositions and the difficulty which he found in fixing his judgment as to the nature and demands of the coming money market, on which the fate of his effort to establish public credit must depend.

The least creditable of Hamilton's propositions is that in which, "as an auxiliary expedient," he proposed a loan on the plan of a tontine, with the right of survivorship among those entitled to the annual payments:—

To consist of six classes, composed respectively of persons of the following ages:

First class, of those of 20 years and under.

Second class, of those above 20, and not exceeding 30.

Third class, of those above 30, and not exceeding 40.

Fourth class, of those above 40, and not exceeding 50.

Fifth class, of those above 50, and not exceeding 60.

Sixth class, of those above 60.

Each share to be two hundred dollars; the number of shares in each class to be indefinite. Persons to be at liberty to subscribe on their own lives, or on those of others nominated by them.

The annuity upon a share in the first class, to be	\$8.40
Upon a share in the second,	8.65
Upon a share in the third,	9.00
Upon a share in the fourth,	9.65
Upon a share in the fifth,	10.70
Upon a share in the sixth,	12.80

The annuities of those who die to be equally divided among the survivors, until four-fifths shall be dead, when the principle of sur-

vivorship shall cease, and each annuitant thenceforth enjoy his dividend as a several annuity during the life upon which it shall depend.*

No action was taken by Congress upon this ill-advised scheme; but it is important to observe that its details appear to have been adjusted upon the plan of the English tontine of 1789, which had been brought out by Mr. Pitt a few months before the date of Hamilton's report.† The classification of subscribers is the same in the two, differing from either of the other English tontines and from the Irish and French as well.‡ In short, it appears that, in his uncertainty as to the kind of investments which would prove acceptable in the United States, Hamilton here grasped at the freshest expedient brought to him by his foreign advices, committing himself to a proposition which shows little of the business-like calculation found in most of his recommendations to Congress.

It was, no doubt, a common belief among Hamilton's opponents that, in shaping these propositions, he had devised a scheme which threatened the country with a perpetual debt. This, it was charged, was the natural result of a weak deference to English precedent and of political theories of English origin, which looked to the strengthening of the central government by all possible influences, whether pure or mercenary.§ That the con-

* *State Papers, Finance*, i. 21.

† On June 10, 1789. See *Parliamentary History*, xxviii. 161.

‡ The English tontine of 1789 was under the act of 29 George III., c. 41. A payment appears to have been made to one survivor in the fiscal year 1887-88, according to *Finance Accounts* (in *Parl. Doc.*, 1888), p. 42.

The annuities proposed by Hamilton were somewhat higher for classes four, five, and six than those in the English scheme. This change was probably made because the terms of the English tontine were found not to be sufficiently attractive, so that the subscription was not filled. See for this and other English and Irish tontines *Report on Public Income and Expenditure* (*Parl. Doc.*, 1869), ii. 571; for the French cases, Leroy-Beaulieu, *Science des Finances*, ii. 288 [1st ed.].

§ Jefferson, in his letter to Washington, September 9, 1792, says that Hamilton "wishes it [the debt] never to be paid, but always to be a thing wherewith to corrupt and manage the legislature." *Jefferson's Works*, iii. 464.

centration of debt and of revenue under federal authority would give instant support to the general policy of Hamilton and his party there was no pretence of denying, and it was perhaps natural that the opposition should believe that a debt which was used to strengthen the government at the outset would be treated as one of its permanent buttresses. The magnitude of the funding operation tended to confirm this idea. That Hamilton's opponents had no definite counter-proposition * appears to have been due in great measure to the belief sometimes expressed, and sometimes tacitly operative, that the debt weighing upon the general and State governments together was too great to be dealt with. To fund the debts of the Confederation at their face, without any attempt at scaling them down, and to assume a great mass of debts incurred by the States for the common defence, was to bind a formidable burden upon a government which was then collecting an independent revenue for the first time.† What chance of ultimate redemption can there be, to what else than a permanent and probably increasing national debt can such a scheme be expected to lead? was the anxious inquiry of men whom we have no right to charge with mere political hostility to Hamilton or with indifference to the national

And twenty-five years later, writing the introduction to his "Anas," he says in a famous passage that Hamilton's financial system "had two objects: 1st, as a puzzle, to exclude popular understanding and inquiry; 2nd, as a machine for the corruption of the legislature." *Ibid.*, ix. 91.

* As an example of the suggestions made by individuals may be cited Maclay's advice, to establish a revenue sufficient "to discharge a reasonable interest, proportionate to the market price of the public debt, until the whole is extinguished by the western sales." *Debates in the First Senate*, p. 259. Maclay's idea of "a reasonable interest" appears, from p. 171, to have been three per cent.

† Gallatin, in his *Sketch of the Finances* (1796), treats the ability of the government to carry this weight as something still to be proved. The objections to the assumption of State debts, he says, rest chiefly on the increase of the general debt and the difficulty of commanding all the resources of the country. "Give the Union that command, prove that its ability of paying the principal of the debt is not impaired by having assumed the State debts, and the measure will stand almost justified." *Writings of Gallatin*, iii. 165.

honor. A few years settled all such questions. The changed relations of the whole commercial world brought such an increase of national wealth as no man could have foreseen in 1790; and, by the irony of fate, it was Hamilton's opponents who reaped the benefit.

Hamilton's answer to all such apprehensions and the effective justification of his policy are to be found in his habitually sanguine estimate of what might be expected from the growth of the country. In 1781, he wrote to Morris that, if the United States should succeed in the war, their population would double in thirty years, and they would be out of debt in twenty.* In his *Report on Public Credit*, he thought that no country would be able to borrow from foreigners upon better terms than the United States, "because none can perhaps afford so good security."† He made his calculations, as we have seen, on an early fall in the rate of interest to be paid by the government. And he wished to hasten the rise of the national securities which he foresaw, in order that, if they should pass into the hands of foreigners, it might be for full value.‡ His optimism was, after all, the truest wisdom; and it explains and justifies the boldness with which he fixed the scale of his funding system. In his view, the debt which was to be funded, so far from being a perpetual burden, would fall easily within the resources of the rising nation; and, as it turned out, a more confident policy still might have succeeded.

The legislation which he advised or procured was strictly consistent with this expectation of future growth. Threatening as his propositions appeared to his opponents, few men would now dispute the statement that he undertook to cast the debt in such form as to keep its redemption fairly within the control of the government, making the securities redeemable either at pleasure or at such

* *Works* (Lodge's edition), iii. 124.

† *State Papers, Finance*, i. 20.

‡ *Ibid.*, 25.

a rate as might be supposed to correspond to the ability of a prosperous country. A quarter of a century ago, the promise of a sinking fund of one per cent. per annum appeared to Congress and to the public to be sufficient.* Less than twenty years ago, a large part of the national debt was made irredeemable for thirty years; and a period even longer was favored by men who were under no suspicion of favoring perpetual debt. With a scheme far removed then from perpetuity, as judged by recent standards, Hamilton undertook also to provide the machinery for carrying on systematic redemption even before the resources needed for the purpose could be counted on with certainty. So far, then, as the terms of his legislation are concerned, or those of the measures proposed by him, but not accepted by Congress, the charges made by his opponents appear to be without real foundation.

It must be admitted, however, that Hamilton, when urging the funding of the debt, sometimes used language which might well expose him to the charge of desiring its permanence and the suspicion of aiming at its establishment on something like the English model. He saw plainly that the revival of industry could only be accomplished by the aid of a sound mercantile credit, and that for the growth of this the establishment and regular operation of public credit were necessary. He saw the advantage which must accrue to the community when the resources of individuals locked up in claims upon the government should become mobile, by being converted into negotiable securities having a recognized standing in the market. And he held the opinion, often expressed since his time, that under some conditions a diffused domestic debt may be a bond of union. In urging his plans, then, he set forth in strong terms these advantages to be gained from the funding system. He sometimes fell little short of declaring a funded debt to be a real increase of capital, although he

*The operation of the sinking-fund provision of 1862 is of course much slackened by the construction which calls for one per cent., not of the original debt, but of the balance remaining unpaid at the beginning of the fiscal year.

did in fact make the distinction between an absolute increase of capital — which, he says, a funded debt is not — and a tendency to increase real wealth by increasing activity.* In his letter to Morris in 1781, he had declared that “a national debt, if it is not excessive, will be to us a national blessing. It will be a powerful cement of the Union.” † And in his *Report on Public Credit* he uses the same expression.‡ On this occasion, however, an explanation follows, which shows us his real thought. “Persuaded as the Secretary is that the proper funding of the present debt will render it a national blessing, yet he is so far from acceding to the position, in the latitude in which it is sometimes laid down, that public debts are public benefits, a position inviting to prodigality and liable to dangerous abuse, that he ardently wishes to see it incorporated, as a fundamental maxim, in the system of public credit of the United States, that the creation of debt should always be accompanied with the means of extinguishment.” This declaration, not standing alone, but repeated on other occasions,§ places his opinion as to national debts on consistent and easily defensible grounds. How far it fell in with the English practice of the day can best be seen when we consider the measures which Hamilton took to secure the regular payment of the debt of the United States, as funded by the act of 1790.

* On this subject, see his *Report on Manufactures*, in *State Papers, Finance*, i. 132.

† *Works* (Lodge's edition), iii. 124.

‡ *State Papers, Finance*, i. 24. Jefferson fastened upon this famous phrase, and in his letter to Eppes, November 6, 1813, remarks that at “the time we were funding our national debts we heard much about ‘a public debt being a public blessing’; that the stock representing it was a creation of active capital for the aliment of commerce, manufactures, and agriculture. This paradox was well adapted to the minds of believers in dreams, and the gulls of that sort entered *bona fide* into it.” Jefferson's *Works*, vi. 239.

§ See especially his *Report on Public Credit* of January, 1795, *State Papers, Finance*, i. 331, 332.

Coming, then, to the second of Hamilton's leading measures, the establishment of a sinking fund for the national debt, we find an expedient unmistakably adopted from the English legislation,—so clearly derived from that source, in fact, that it would not call for discussion here if the meaning of the English precedent had not sometimes been lost sight of, and the key to Hamilton's action therefore lost. Without doubt, Hamilton in this matter followed Mr. Pitt.* What, then, was the scheme of Pitt? This question is not to be answered by referring to the English sinking fund, such as it became under later legislation in the years from which most of the current impressions about it date. We must go back to Mr. Pitt's sinking fund act of 1786, that being the legislation actually before Hamilton when he adopted his policy, and not yet modified even by Pitt's act of 1792, when the act of Congress of that year gave to our system its more formal organization.

Having a sufficient surplus of revenue in 1786, and, as was then believed, the prospect of a long peace, Mr. Pitt carried through Parliament an act† appropriating £250,000 quarterly to be expended in the purchase of government securities, and providing that the interest on securities purchased should also be so expended, all under the direction of a board of commissioners of high rank, the accumulation to continue until such time as the commissioners should hold securities yielding a clear income of four millions, beyond which point, distant by calculation about twenty-eight years, the interest on further purchases should be stopped, and its amount made available for

* A committee, consisting of Hamilton, Madison, and Fitzsimons, reported to Congress a resolution, December 16, 1782, declaring that any excess of funds granted by the States for the support of the debt should be inviolably appropriated as a sinking fund for the payment of the principal. *Journal of Congress*, viii. 38. Whether Hamilton was the author of the resolution or not, it does not conflict with the above statement of his indebtedness to Pitt.

† 26 George III., c. 31.

the relief of tax-payers. This sinking fund of one million per annum, it is to be observed, was by the terms of the act applicable to "the present public debt," of which the estimated capital was a little over £238,000,000. After all, however, Mr. Pitt looked to excess of income over expenditure as the means of payment; and the dazzling results of compound interest, often drawn from Dr. Price's popular calculations,* were only significant of the rate at which a given surplus might be made to act, and not indicative of any new power of extinguishment. Forced in 1792 to meet the possibility of extraordinary expenditures which might require fresh loans, Mr. Pitt carried through an additional act,† providing that every future loan should be accompanied by fresh taxation sufficient to meet its interest and to provide a sinking fund of one per cent. per annum for its capital, so that it might be extinguished in thirty or forty years,‡ according to the rate at which purchases could be made for that purpose. The act of 1792, however, merely carried out the plain intent of the act of 1786, that every funded debt should have the means provided for the steady extinguishment of its principal. The machinery of the acts, the establishment of a board of commissioners to apply the income of the fund for this purpose and to invest the interest

* Dr. Price's *Appeal to the Public on the Subject of the National Debt* was published in 1772, and had been followed by other pamphlets on the same subject before 1786, when Mr. Pitt accepted his authority. Dr. Price was favorably known in the United States; for in 1778 Congress invited him to come to this country and take charge of the finances. *Diplomatic Correspondence of the Revolution*, iii. 64. And, as by the edition of his *Observations on Reversionary Payments* in 1783 he had thrown new light on the subject of life annuities, it is a little singular that Hamilton passes him by in silence, using the old tables of Halley for his calculations on annuities. *American State Papers, Finance*, i. 32.

† 32 George III., c. 55. For a review of Mr. Pitt's legislation on this subject, see Mr. Huskisson's speech of March 25, 1813, *Hansard's Parliamentary Debates*, xxv. 287.

‡ Ricardo says "under the most unfavorable circumstances in forty-five years." *Works*, 524.

earned upon its accumulations, was a device for holding Parliament to the policy which it had undertaken; and the high rank of the commissioners was relied upon as a protection against legislative tampering. Under all the legislation down to 1802,* Mr. Pitt's sinking-fund system, stripped of its formalities, was as nearly as possible that which States and corporations not infrequently adopt in our own day. It was not illusory in its financial provisions, nor even in its dependence on the chances of war or peace. It did rest, however, upon a complete illusion as to the possibility of holding Parliament permanently to the system,—as to the possibility, that is, of binding the debtor by a compact made with himself.†

This political defect of Mr. Pitt's measure was not disclosed, however, during Hamilton's administration. Especially in the years 1789–1792, the English exchequer was working on a peace footing, and the sinking fund was therefore the last new thing in finance and full of promise, when Hamilton organized his financial system, and adopted, as a fundamental maxim, “that the creation of debt should always be accompanied with the means of extinguishment.” The application of this maxim made

* 42 George III., c. 71.

† In Ricardo's hard-headed *Essay on the Funding System*, he declares that “it will not . . . admit of a doubt that, if Mr. Pitt's sinking fund, as established in 1792, had been always fairly acted upon,—if, for every loan, in addition to the war-taxes, the interest and a one per cent. sinking fund had been invariably supplied by annual taxes,—we should have made rapid progress in the extinction of debt.” *Works*, 531. But “Mr. Pitt flattered himself most strangely. . . . With the knowledge of Parliament which he had, it is surprising that he should have relied so firmly on the resistance which the House of Commons would offer to any plan of ministers for violating the sinking fund.” *Ibid.*, 543. In its actual operation under later legislation, Ricardo thought the sinking fund had increased debt rather than diminished it, and so concludes “that no securities can be given by ministers that the sinking fund shall be faithfully devoted to the payment of debt, and without such securities we should be much better without such a fund.” *Ibid.*, 545.

For Lord Stanhope's attempt to make the sinking fund a part of a fresh contract with the fund-holders, see the debate in the House of Lords, May 22, 1786. *Hansard*, xxvi. 17.

it essential that with the funding of the debt should be joined some plan for finally sinking the principal. In his *Report on Public Credit*, then, Hamilton proposed the establishment of a Board of Commissioners, composed, like Pitt's, of high officers of state,* in whom should be vested the control of a fund, to be applied to the purchase or payment of debt, and to continue so vested until the whole of the debt should be discharged; and he also proposed the contraction of a new loan by the commissioners, its proceeds to be applicable chiefly to the payment of matured foreign debt and to the purchase of public securities below par, it being, in his opinion, an important object both to raise the value of the public stock in the market and to secure for the government the profits of such a reinvestment. Waiving the proposition for a new loan and its application, it is clear that Hamilton had in mind the establishment of an organized sinking fund. The embarrassment was in finding the means for feeding it, in the untried resources of the new government. He proposed to devote for this purpose the net produce of the post-office, to an amount not exceeding one million dollars, to be used in purchases, and so to serve as a nucleus for a growing fund. Congress, however, besides a general appropriation of the proceeds of Western lands for sinking the existing debts of the United States,† preferred to use for this purpose the surplus of revenue which might remain at the end of the year 1790, owing its existence to the funding of interest on the domestic debt of the

* Pitt's commissioners, under the act of 1786, were the Speaker of the House of Commons, the Chancellor of the Exchequer, the Master of the Rolls, the Accountant-General of the Court of Chancery, the Governor and the Deputy Governor of the Bank of England. Hamilton proposed as commissioners the President of the Senate, the Speaker of the House of Representatives, the Chief Justice, the Secretary of the Treasury, and the Attorney-General. Congress, by the act of August 12, 1790, § 2, added the Secretary of State, and struck out the Speaker of the House. *Statutes at Large*, i. 186.

† Act of August 4, 1790, § 22, *Statutes at Large*, i. 144.

United States to that date.* This appropriation was not perfected by any provision for the investment of the interest accruing on stock purchased by the commissioners, so that the act of 1790 for the reduction of the public debt went no farther than the mere establishment of a commission, not provided with any permanent resource whatever.† Hence the necessity for the recommendations made by Hamilton in his report of January 23, 1792, when, evidently in pursuance of his original conception, he advised that the interest on so much debt as might at any time have been purchased or paid by the commissioners should itself be appropriated for further payments or purchases. "It will deserve the consideration of the legislature," he added, "whether this fund ought not to be so vested as to acquire the nature and quality of a *proprietary* trust, incapable of being diverted without a violation of the principles and sanctions of property."‡ The act which carried out this recommendation as to the investment of interest accruing on previous purchases,§ although it does not use the term "sinking fund," in fact created such a fund for the then existing debt of the United States, on precisely the model of Pitt's sinking fund of 1786;|| and it must be added that, although the act of 1795 and Gallatin's act of 1802 differed from this model in form, they both in fact depended for their efficacy upon the same essential principle,—the compounding of interest by the investment of interest accruing on purchases already made.

* This surplus is reported, February 1, 1793, to have amounted to \$1,374,856. *State Papers, Finance*, i. 219.

† See act of August 12, 1790, *Statutes at Large*, i. 186.

‡ *State Papers, Finance*, i. 148.

§ Act of May 8, 1792, §§ 6, 7, *Statutes at Large*, i. 282.

|| The term "sinking fund" does not appear in the legislation until the act of March 3, 1796. The commissioners, however, in their journal, appear to have called themselves "Commissioners of the Sinking Fund of the United States" as early as August, 1791. *State Papers, Finance*, i. 235.

We have seen that Pitt in 1786 relied imprudently on the good resolutions of future Parliaments. Hamilton, by the peculiar form which had been given to a large part of the debt of the United States, was enabled to secure a much more solid safeguard for the uninterrupted working of his sinking fund. The six per cent. debt of the United States had been made reimbursable by payments not exceeding eight dollars upon a hundred in any one year for both principal and interest. The act of 1792 had contemplated the redemption of this stock when the whole annual income of the sinking fund should have reached two per cent. of the whole amount of the stock outstanding, and had declared the interest accruing on stock held in the sinking fund to be "appropriated and pledged firmly and inviolably" for this purpose. But, in his elaborate report of January, 1795,* Hamilton, dealing with larger revenues and brighter prospects, recommended an addition to the income of the sinking fund of so much of the proceeds of duties on imports and tonnage and of excise as would suffice to begin at once the redemption of the six per cents. bearing a present interest; and so much of the same revenues as, with the dividends accruing to the government from the United States Bank, would complete the payment for the bank stock and enable the redemption of the deferred six per cents. to begin in 1802. These recommendations, with others strengthening the organization of the sinking fund, were adopted by Congress. The appropriation of the revenues and resources in question was made permanent "until the whole of the present debt of the United States" should be reimbursed; "and the faith of the United States is hereby pledged that the income or funds aforesaid shall inviolably remain, and be appropriated and vested as aforesaid, to be applied to the said reimbursement and

* *State Papers, Finance*, i. 320.

redemption in manner aforesaid until the same shall be fully and completely effected." * Under these provisions, the redemption of the six per cent. stock began from January 1, 1795, by a series of payments fixed at eight per cent. per annum for principal and interest; and the stock was thus converted from an ordinary six per cent. of indefinite duration "into an annuity of eight per cent. per annum for a period of somewhat less than twenty-four years." Hamilton, in proposing this devotion of revenue to the redemption of debt, had intended to make the arrangement a contract with creditors, not to be violated. "The intent is to secure, by all the sanctions of which the subject is susceptible, an inviolable application of the fund, according to its destination. No expedients more powerful can be devised for this purpose than to clothe it with the character of *private property* and to engage absolutely the faith of the government by making the application of it to the object a *part of the contract with the creditors.*" † Wolcott, Hamilton's successor, in his communication to the House, January 26, 1796, ‡ observed that, "as the injunctions of the law upon the commissioners of the sinking fund are unconditional, and as permanent funds have been vested and appropriated, it is conceived that a successive reimbursement annually of the debt before mentioned has become an irrevocable stipulation with the creditors." Gallatin also recognized a pledge of the public faith in this action; and the change made in the sinking-fund legislation by his advice in 1802 § carefully saved all rights of creditors under previous acts, and

* Act of March 3, 1795, § 9, *Statutes at Large*, i. 435.

† *State Papers, Finance*, i. 332. A little farther on is a plain allusion to the diversion of the English sinking fund from its purpose prior to the act of 1786.

‡ *Ibid.*, 381.

§ Act of April 29, 1802, *Statutes at Large*, ii. 167. See especially §§ 3, 7.

he and his successors therefore continued, in war as well as in peace, the reimbursement undertaken in 1795.*

The idea, then, which Hamilton had in common with Pitt, and of which Pitt's action was the practical illustration, was to couple with every debt the means for its extinguishment,† to be applied to that purpose, whatever the condition of the Treasury otherwise. This could not prevent debt from accumulating, if expenditure was excessive; but it insured the good credit of the loans to which the plan was applied, and the system, if adhered to, tended to keep constantly before the legislature the necessity of having a stated revenue above ordinary expenses. The application of this idea to an existing debt Hamilton was able to provide for more effectively than Pitt, owing to the peculiar form given to the obligations of the United States; but in neither case did it prove to be possible to guarantee sufficient provision for such fresh expenditure or debt as the legislative will might insist upon. Less than justice has usually been done to the common sense of both of these great statesmen. There is nothing to show that either of them in adopting his system had any delusion as to the impossibility of paying debt without money, or any notion that compound interest could be made to supply the place of an adequate revenue or even to conceal its absence. Pitt, at the time when Hamilton took him as his example, had a surplus; and Hamilton

* For the rate at which stated payments of eight per cent. per annum extinguished the capital as well as defrayed the interest, see the table given by Wolcott, *State Papers, Finance*, i. 405; compare also the act of April 28, 1796, § 1. Inspection of the table shows the application of the compound interest. Obviously, Gallatin's system of devoting a fixed sum for interest and redemption of principal together, thus increasing the payment of principal as the sum required for interest diminished, was an application of the same method to the whole debt instead of a particular part thereof.

† Hamilton's *Report on Public Credit* of 1796 gives in a foot-note a significant reference to this provision of the English act of 1792. See *State Papers, Finance*, i. 331.

hoped for one, and upon good grounds. Apply this surplus effectively to present debt, and then contract no more without at the same time making provision from new sources for its interest and ultimate payment,—this was the system on which both proceeded. In the one case, the system was swamped by the gigantic wars of the French Revolution; in the other, it was made useless by the astonishing growth of national revenue; but in neither case, under the conditions and for the purposes of the time, was it the pure folly which it is often represented to have been.

The third point in Hamilton's financial system which we have to consider here is the establishment of a Bank of the United States. This measure was referred to by Hamilton in his *Report on Public Credit* as a part of his scheme not then fully matured, and was presented in form in December, 1790, under a resolution of the House adopted in the previous August, calling upon the Secretary to report "such further provisions as may, in his opinion, be necessary for establishing the public credit." In stating the advantages to be gained from a bank, he dwelt especially on the influence of a bank in quickening and virtually increasing the productive capital of the country and its utility as a financial agency of the government. It was then not far from eleven years since the probable date of his draft of a letter to Morris* urging the establishment of a Bank of the

*The draft of a letter to Morris, *Hamilton's Works* (Lodge's edition), iii. 61, is inserted in the earlier edition of the *Works*, i. 116, as if written between December, 1779, and March 17, 1780. A few important blanks are left in it to be filled later, and the manuscript is said to be otherwise defective. It seems not to have been referred to in subsequent correspondence between Hamilton and Morris, and may then perhaps be the draft of an intended letter, never sent, but interesting as showing the state of Hamilton's opinions on the subject when he was twenty-three years old. If sent, the letter was intended to be anonymous, as appears from its last paragraph.

United States by the Confederation, and not far from ten years since his letters to Duane, Sears, and again to Morris, discussing and enforcing a similar proposition. The claim of priority in the conception of a national bank, which has been rested on these letters, is hardly a valuable one. The letters were written at the moment when the continental paper had become practically worthless, and Congress was at its wits' end. The schemes proposed by Hamilton were perhaps no wilder than were offered by others, but he would have been slow in 1790 to recognize their affinity with the maturely deliberated proposition of that year. It is enough to say that the second and more carefully elaborated of the letters to Morris * proposes a bank, the stock of which, to the extent of at least one-third, might be paid for in landed security, the notes of 20s. and upwards to bear interest, and the places of redemption to be in the interior, making "applications for payment of bank-notes less convenient." † Among the advantages of the scheme, besides the loans to be made to Congress, was the familiar attraction of all land-bank schemes, that proprietors could have the use of their land and also the use of a cash representative of its value.‡

The earlier schemes, however, mark the length of time for which Hamilton's mind had been busied with the idea of securing financial relief from a great banking institution of some sort; § and his letters show his interest in the work-

* April 30, 1781, Hamilton's *Works* (Lodge's edition), iii. 82.

† *Ibid.*, p. 118.

‡ *Ibid.*, p. 107.

§ The constitution of the Bank of New York, adopted March 15, 1784, given by Domett, *History of the Bank of New York*, p. 11, was written by Hamilton, but contains little except the formal provisions necessary for determining the duties and responsibilities of officers, rights of stockholders, and other details incident to the organization of a moneyed institution. The act of incorporation (*Ibid.*, p. 122), passed March 21, 1791, contains, however, a series of provisions relating to the banking powers of the corporation, which follow closely even the phraseology of the act passed by Congress a month before, establishing the Bank of the United States.

ing of the great European banks. Of these there was but one which could be an available model. The French Caisse d'Escompte was embarrassed by its close connection with the government, hardly tried to conceal the real inconvertibility of its paper, and was fast approaching ruin. The Bank of Amsterdam, still in good credit, was organized upon a plan adapted only for an opulent community, rich in specie, and indifferent to the use of bank credit in its usual forms. There remained the Bank of England, a successful institution, strengthening private enterprise, aiding the government,* and regulating currency upon a sound basis. Without presenting this formally as an example,† he shaped his own proposition according to the lines of the Bank of England, with the changes which the circumstances of the United States required.

The primary question as to the connection of the government with the proposed bank is argued and settled by Hamilton in his report in accordance with the English precedent and directly against the other European cases. He concludes in favor of an institution in private hands and under private direction, and to be influenced as little as possible by public necessity. "The keen, steady, and, as it were, magnetic sense of their own interest as proprietors, in the direction of a bank, pointing invariably to its true pole, the prosperity of the institution, is the only security that can always be relied upon for a careful and prudent administration." No profit to be gained by the State from banking could in his mind be set against this advantage. The State might be an owner of stock,

* In 1781, Hamilton, writing to Morris, and referring to the Bank of England, says, "'Tis by this alone she [England] now menaces our independence." *Works* (Lodge's edition), iii. 101.

† The Bank of England is not mentioned in the *Report on a National Bank*, except in a passage near the beginning, where Hamilton says that public banks have successively obtained in Italy, Germany, Holland, England, and France, as well as in the United States. The omission appears to be studied.

though not of a principal part of it, and ought to exercise a supervision for the good of the community; but he admitted no real departure from the theory of the Bank of England as an essentially private establishment employed as a public agent. This independence of the executive he secured by forbidding loans of serious amount for the use of the government, unless specially authorized by law, as was done by the Bank of England charter until the passage of Mr. Pitt's act in 1793.* As for the holding of public securities as an investment of the capital of the bank, Hamilton was establishing his bank in the presence of a debt already contracted, instead of using it as a means of borrowing, as the Bank of England had been used. It was enough for his purpose, then, to allow three-fourths of the stock to be paid for by transfer of public securities, these to be held until the needs of the bank might require their sale.

It has been remarked already that for Hamilton's purposes a bank was needed of a different kind from the Bank of Amsterdam. A bank of discount, deposit, and issue was required for the transaction of general business, public and private. In the summary of his plan given in his report, Hamilton makes a brief statement as to the powers of the proposed bank as follows:—

VII. The company may sell or demise its lands and tenements, or may sell the whole or any part of the public debt, whereof its stock shall consist, but shall *trade* in nothing except bills of exchange, gold and silver bullion, or in the sale of goods pledged for money lent, nor shall take more than at the rate of six per centum per annum upon its loans or discounts.

The bill offered in the Senate was drawn by Hamilton and, with few changes, became a law, and we there find this important provision amplified in terms which may

* 33 George III., c. 32. See McLeod, *Theory and Practice of Banking*, i. 445.

fairly be set side by side with a similar provision in the Bank of England Act of 1694.

[*Act of February 25, 1791.*]

The said corporation may sell any part of the public debt whereof its stock shall be composed, but shall not be at liberty to purchase any public debt whatsoever; nor shall directly or indirectly deal or trade in anything, except bills of exchange, gold or silver bullion, or in the sale of goods really and truly pledged for money lent and not redeemed in due time; or of goods which shall be the produce of its lands. Neither shall the said corporation take more than at the rate of six per centum per annum, for or upon its loans or discounts.

[*Act of 5 Will. and Mary, c. 20.*]

§ xxvii. [That the corporation shall not deal in Goods, Wares, or Merchandise.] § xxviii. Provided, That nothing herein contained shall in any ways be construed to hinder the said Corporation from dealing in Bills of Exchange, or in buying or selling Bullion, Gold or Silver, or in selling any Goods, Wares, or Merchandise whatsoever, which shall really and *bona fide* be left or deposited with the said Corporation for Money lent and advanced thereon, and which shall not be redeemed at the Time agreed on, or within three Months after, or from selling such Goods as shall or may be the Produce of Lands purchased by the said Corporation.

Other passages also might be cited to show that the framer of the act incorporating the Bank of the United States had the English acts open before him; but, after all, the important fact is that in both there was the same purpose of establishing a private company with general banking powers, to co-operate with the Treasury. The limits and safeguards thrown around the use of these powers were few in both cases, with differences mainly to be accounted for by differing conditions. In each, the redemption of notes in specie was required; and the amount of the issue was limited in the charter of the Bank of England by forbidding debts in excess of the capital, and in the charter of the Bank of the United States by forbidding the debts exclusive of deposits to exceed the

capital. The prohibition of investment in real estate was inserted by Hamilton,* and with good reason, considering the condition of the United States at that date.

Closing here the present examination of Hamilton's system, it must be added, in order to avoid misconception, that it is in the grouping of these measures so as to make a consistent scheme for the accomplishment of a definite purpose that we find Hamilton's best title to rank as a great financial statesman. He had the insight and cheerful resolution which enabled him to see and draw out the still latent strength of the new country, the knowledge of the world necessary for bringing together the best of tried expedients, and the breadth of conception required for shaping a system which should make growth rapid and burdens lighter, by the creation of public and private credit. No statesman could have a greater task set for him, and political science can hardly have in store any greater triumph than this application of the experience of other men and other nations. Details may be criticised, and yet as a whole his measures meet the real test of financial soundness, representing in their great features the best that could be done under the conditions then existing. And in this as in other parts of our political system his impress was lasting. "The results, legislative and administrative," says the biographer of his greatest successor, "were stupendous and can never be repeated. A government is organized once for all, and until that of the United States fairly goes to pieces no man can do more than alter or improve the work accomplished by Hamilton and his party."

CHARLES F. DUNBAR.

* Hamilton's letter to Church, March 10, 1784, condemns Chancellor Livingston's scheme of a land bank and shows that Hamilton had then outgrown the ideas expressed in his letter to Morris in 1781. See *Hamilton's Works* (J. C. Hamilton's edition), i. 414.

A NEW VIEW OF THE THEORY OF WAGES.

I.

LIKE many familiar words whose meanings seem perfectly clear and simple, the word "wages" has different significations, which are liable to be confused. It sometimes means the earnings of labor,—the remuneration, that is, which the laborer obtains as the result of his labor, and which is measured in the various commodities entering into his consumption. Again, it sometimes means the cost of labor to the employer,—that is to say, the price which he pays for labor in money as the representative of general value, money being the standard in which he estimates wages in common with his other expenditures and with his receipts. These two meanings of the word "wages" correspond to two different aspects of labor; for, in considering labor, we may attend principally either to the sacrifices involved in it or to the useful services which it renders. The laborer, in anticipation of the recompense to be received, submits to the sacrifice and undergoes the irksomeness implied in the word "labor." But the sacrifice and irksomeness of labor would secure it no market, and would be utterly insufficient to endow it with exchange value. On the other hand, the services of labor in affording direct gratifications or in producing useful commodities alone procure a sale for it; and these services are weighed by the purchaser in the same scale with the utility of material commodities or of the services which such commodities render.

By far the more interesting of the two aspects of the wages question is the problem of the laborer's remuneration, for that determines the welfare of the greater part of mankind. To this, the merely commercial question of

the price of labor is really subordinate. For the inquiries of political economy have for their ultimate object the gratification of human wants; and questions as to the mechanism by which this is attained are in reality merely subsidiary thereto.

For this reason, there is a natural eagerness to solve at once the question of remuneration by making it the direct object of inquiry. But, if we would attain any valuable and trustworthy results, we must not expect to reach our conclusions at a jump, but must travel cautiously step by step along the path of cause and effect, inquiring carefully as we go into the reasons why labor is bought and sold and into the conditions which must be fulfilled in order that its price may be in equilibrium. It is clear that the price can only be in equilibrium when the supply and the demand are equal, and that the rate of wages must be such as to make them equal. To inquire how wages do this—to examine, that is, more closely into the mechanism whereby the equation of supply and demand is realized—is the object of the present paper. And this is the only natural and right way to proceed in inquiring into the law of the price or value of anything whatever. If some writers have neglected or abandoned it in the case of labor, they have probably done so because they have been unable to see how it issued in any solution of the question. Should we succeed in finding a solution in this way, it is not likely that any one will cavil at the method we pursue.

If, after investigating the influence of price, we should find how supply and demand are made equal, it would then be in place to inquire more particularly into the other factors which join to constitute the supply and demand; but to do so would probably exceed the limits of a single paper.

There are but two ways in which the supply and the demand of anything can be made equal: one is by the

action of price upon supply, the other is by the action of price upon demand. Now, the supply of labor is in the main a question of population; and the influence of the price of labor upon the population only takes full effect after a long series of years,—not less, indeed, than an entire generation. Its laws have therefore usually been treated by economists in connection with the principle of population. But if moderate periods of time only are under consideration, the influence of price upon supply being so long delayed, and being also for that very reason deeply interwoven with other causes, we may disregard its effect. It is under this condition that economists have generally sought to lay down the law of wages; and in this course we shall follow them. The law thus sought is the law of what Ricardo called market wages as distinguished from natural wages, by which latter term he meant that remuneration which would just suffice, on his theory, to induce laborers to maintain population at its actual amount. Supply being treated as stationary, it follows that the equality of supply and demand, which is the condition of the equilibrium of price, can only be reached by the influence of price upon demand.

The condition of the problem as laid down above clearly indicates in what meanings we should use the words "labor" and "wages." We must use them in those meanings in which they influence the demand for labor. By the word "labor" we shall therefore mean the services which the laborer renders, because, as we have already seen, these alone give rise to a demand for labor. By the word "wages" we shall mean money wages, money being the commodity in which the employer compares the cost of wages with the cost of other things.

The problem of wages therefore, as I present it, is merely the problem of the price of labor.* But, when this prob-

* For the sake of clearness, I shall commonly use the expression "price of labor" instead of "wages." In so doing, I of course ignore the influence of

lem is solved, it will be an easy step to apply our conclusions to the solution of the intrinsically more important and interesting problem of the laborer's remuneration; for this latter is the resultant of the price of labor and of the price of those commodities which the laborer consumes, assuming always that the quality of labor is the same.

II.

Wages, or the price of labor, will be in equilibrium when the demand just equals the existing supply; and this will occur when it pays employers to hire the whole number of laborers who are seeking employment, and no more and no less.

People wish to hire or buy the services of labor for the very same reason that they wish to buy anything else,—simply because these services afford an immediate gratification or aid in producing material objects which do so. In other words, the hiring of labor, like the purchase of any commodity, is either for the purposes of productive industry or of unproductive expenditure.

In productive industry, every form of investment is open to the employer. He may lay out capital on buildings or machinery. He may expend it in improvements of the soil or in the purchase of beasts of burden or of other animals. He may keep little or much of it locked up in the form of materials or of money. All these things are embraced in what may be called auxiliary capital. On the other hand, the employer may use his capital to buy labor, either slave or free, according to the institutions and laws of the particular country. In all cases, he is governed by one and the same motive,—namely, the desire for gain; and, according to his expectations as to the comparative profit to be reaped, he turns capital into

changes in the value of money, as I may safely do in the limits set for this discussion, trusting to the reader's intelligence to make the necessary correction in any application he may make of my results.

one field or into another. He does not buy labor until he has compared the profit to be got by so doing with that obtainable by a different outlay. Upon his decision depends the demand for labor. If labor commands a high price, he economizes in its use and employs more auxiliary capital. If its price falls, he gradually increases his use of it and curtails his other expenditures. At every rise in price, some of its uses are abandoned and demand shrinks. Every fall in the price enlarges the field of employment and stimulates the demand.

What is here stated of labor is equally true of everything else; and not only is it true of each particular commodity, it is true also of auxiliary capital as a whole. The use of any tool increases as its cost declines, and *vice versa*; and in the same way the general use of auxiliary capital increases relatively to the use of labor, as the rate of interest or price of using capital falls. Where the interest on a given amount of capital is less than the price of such labor as would do the same work, auxiliary capital is used. Where the price of labor is less than such interest, labor is used. If a man can be hired to do a certain piece of work for one hundred and ten dollars, and if when interest is at six per cent. a machine can be hired for one hundred and twenty dollars that will do the same work, then, so long as the rate of interest remains at six per cent., labor will be employed; but if interest falls to five per cent., and the hire of the machine falls in consequence to one hundred dollars, then the machine will be employed. The dividing line between the use of capital and the use of labor varies with the rate of interest and with the price of labor; and in those intermediate cases which are close to this line, and in which advantage wavers between labor and capital without clearly deciding itself for either, the wages of such amount of labor and the interest of such amount of capital as are just able to do the same work or to supplant the one the other are equal,

splendid equipages, or rich viands and costly wines, or the services of teachers or of musicians and actors, of soldiers, retainers, or menials; and, as the captain of industry aims to get the greatest product for the least cost, so the consumer aims to get the most gratifications for the least outlay, and is to no small degree guided in his selection by the comparative costs of the various forms of expenditure which offer themselves to him.

From what has been said, it appears that the demand for labor can only be equal to the supply when the price is such that the employer can gain no pecuniary advantage by substituting either labor or auxiliary capital the one for the other in any of their various uses. Whenever this condition of things exists, price is in equilibrium; for otherwise demand would either exceed or fall short of supply. At any higher price of labor, employers would hasten to substitute for it the use of tools or other forms of auxiliary capital in those operations where there had already been but little advantage in using labor; and demand for labor would therefore slacken and fall short of supply. At a lower price, employers would withdraw auxiliary capital from some of the operations where its advantages had been already small, and would buy labor instead; and demand would outrun supply. Thus the very aberrations of price from its normal rate set forces at work which in the end restore its equilibrium.

It is true that changes in other circumstances, that misinterpretations of the industrial position, or untoward struggles to raise or to lower price, do continually disturb the market. But it is not necessary that the equilibrium be ever exactly realized, or that it should prevail undisturbed. Water seeks its own level, but yet the sea is never quite smooth; and so, whatever fluctuations sweep over the wages market, price forever gravitates toward that figure at which no portion of capital devoted to the purchase of labor can be more profitably converted into

auxiliary capital, and no portion of auxiliary capital can be more profitably diverted to the purchase of labor, and it never in a state of perfect competition remains long remote from this level. This is, after all, but an application of Adam Smith's old maxim, that the profits of capital must be equal in each of its employments.

That the substitution of labor and auxiliary capital for each other may be induced by changes in the rates of interest and of wages is a truth which has commonly been overlooked by economists. Thornton, in the vehemence of his refutation of the wages-fund theory, went so far as to assert, and in this he obtained the adhesion of Mr. Mill, that in the case of labor "demand does not increase with cheapness" (p. 87, Thornton *On Labor*, 2d edition). Because labor is indispensable, it seemed to these distinguished economists that no part of it could be curtailed, and that no increased amount would be used, owing to change of price. Mill even proclaimed that expenditure in wages is limited only by the aggregate means of the employing class (deduction being only made of the amount required to maintain themselves and their families), which implies a state of industry in which tools are discarded, and where the completion of the product follows so rapidly as to dispense even with the necessity of carrying a stock of partly finished materials. (*Dissertations and Discussions*, iv. p. 44.)

Labor certainly is indispensable. Auxiliary capital cannot work unattended by labor; and we may add that in modern civilized industry labor seldom works unsupplemented by auxiliary capital. Many necessary things can only be done by labor, and many others can only be done by the use of natural agents or of auxiliary capital. Others still can be done equally well by the use of either of them. Of the vast number of processes which are carried on by machinery, the greater number perhaps could be executed as well by hand labor. Machinery is preferred simply be-

cause the cost of production is lessened by its use. Also, in many processes now executed by hand, machinery would be equally efficient; but it is not used, because it would involve a greater cost of production. In these cases, opportunities for labor or for auxiliary capital to supplant the one the other only occur when either the price of labor or the cost of using machinery changes. In some cases, a great change only will afford such opportunities: in other cases, a small change will suffice. But there are other cases in which the cost is equal, or very nearly equal, whether labor is employed or auxiliary capital. In such cases, the slightest change in the price of labor immediately affects the demand for it.*

The condition, therefore, upon which demand will equal supply is as follows: *The price of a given amount of labor is equal to the price which is paid for the use of such amount of auxiliary capital as can replace it in those operations where the two things may be indifferently employed with equal pecuniary advantage.* This we may call the law of wages.

To illustrate the working of this law, we may arrange all operations in a scale showing the relative cheapness of using labor and of using auxiliary capital in each case. The gradations in this scale will be as many as the minute degrees in which the relative cost of these two methods differs in the infinite variety of possible operations. Where the cost is just equal, labor and capital will be used indifferently. On either side of this point, that one of the two will be employed which is relatively the cheapest. Where it is cheaper to hire labor, labor will be used. Where it is cheaper to hire the use of auxiliary capital, auxiliary capital will be employed. In some operations there will be an advantage in the use of auxiliary capital which cannot be overcome; in some there will be a similar advantage in the

*Men substitute mechanical for muscular forces because they are cheaper. In the great majority of cases, the development of machinery is the escape from the dearth of labor. (J. E. T. Rogers's *Political Economy*, p. 128, 2d edition.)

use of labor. These advantages on both sides will gradually shade away until they disappear or merge in those operations where the same results can be had with equal profit to the employer, whether labor is used or some form of auxiliary capital.

And, if we suppose the gradations in the scale to be of infinitely minute amounts, it follows that at every price of labor there will be some occupations where the costs of using labor and of using capital are identical. And (always disregarding the effect of economic friction and of the dislike of change) it follows that, at whatever point this equality of costs exists, labor and auxiliary capital will there be employed indifferently; while on one side of it labor alone will be used and on the other side capital exclusively, but always at the same prices as where the cost is the same of using either.

Among all the occupations in which it would be possible to employ either labor or capital to produce the same result, a given amount of labor will at this point where the costs are equal supplant less capital than in any other occupation where labor is actually used instead of capital; and, similarly, a given amount of capital will at this point supplant less labor than anywhere else where capital is actually employed instead of labor. It is therefore a peculiarity of those occupations in which labor and capital can be used indifferently that in them a given amount of either, whether it be of labor or whether it be of capital, will supplant a less amount of the other than anywhere else, where it is actually and constantly employed.

In all other employments where capital is used, it has some decided economical advantage over labor; and, similarly, wherever else labor is used, it has some decided advantage over capital. Only in this common field do their relative advantages merge, which comes to saying that each is here at its least or final utility relatively to the other. And, as the price paid for the use of labor and

capital in each of their other employments is the same as it is here, we arrive at the conclusion that, just as the final utility of every commodity fixes its absolute price, so the relative final utility of labor and of capital fixes the relative prices paid for the use of them.

III.

To accurately compare the costs of employing labor and auxiliary capital requires that we include not only the prices paid directly for the use of each, but also all outlays of every kind incident to that use.

The hire, or price, of labor covers its whole cost, or all but a trifling part of it. The principal element of the cost of using capital is interest: interest alone is really paid as compensation for its use. But interest is by no means the only element of cost. In order to keep it intact and provide against sudden loss or gradual depreciation, there must be provided, in addition to interest, a fund for insurance and renewals, or wear and tear. These things vary greatly with the nature of the particular business; while interest, strictly speaking, does not so vary. And, besides insurance against loss by sudden destruction or by the dilapidation of gradual wear and tear, there must be an insurance provided against the possible depreciation in value arising out of the instability of business and its changing conditions. For, as capital assumes fixed and durable forms, it loses the valuable quality of convertibility, and can no longer be withdrawn from a declining business, but is liable to be robbed of its value by changes in trade or fashion, or by the exhaustion of natural resources which it was used to exploit, or by improvements in the methods of industry. All these risks and disadvantages demand for many of the permanent investments of capital an extra rate of what we may call business insurance, varying with the degree of the uncertainty and

dread of change. Labor is therefore often employed at a price far exceeding the ordinary interest on the amount of capital which could replace it. The owner of a silver mine for these reasons may sometimes wisely hesitate to erect labor-saving appliances, even at an annual saving of from thirty to fifty per cent. on their cost; while a prudent manufacturer will often pass by opportunities to save ten per cent., or even twenty per cent., on the cost of improvements which it is in his power to make. Thus the adoption of known improvements by existing establishments is often delayed by the expectation of still further inventions and discoveries. But in new enterprises undertakers strive to adopt every known or possible improvement; and each improvement that is made suggests the possibility of further ones. The rapid growth and the frequent installation of new plants are among the principal causes of the great superiority in many branches of American manufacturing practice as compared with European,—a superiority which goes far to overcome whatever advantages foreign manufacturers may possess in cheaper labor and in longer experience.

But the charges for insurance and for renewals, or wear and tear, are not strictly charges for the use of capital, but simply a provision to preserve its amount unimpaired. Excluding these charges from the cost of using capital, its interest remains as the compensation for its use and is equal in all its employments at the same time and place. The rate of interest varies only with changes in the degree of productiveness or in the relative distribution of the product between labor and capital.

Disregarding, therefore, all items of the cost of employing auxiliary capital except interest, the law of wages assumes this form: *The interest on capital and the price of labor, in all employments, are fixed by the rates paid for their use in those of their actual employments in which they are*

used indifferently and where, therefore, a given amount of either one of them is capable of supplanting the least amount of the other; and the same price is in all cases paid for the use of those amounts of each which can in such employments be substituted the one for the other.

Since the time of Ricardo, it has often been said that a rise of profits or of interest is only possible through a fall of wages. But the very first inference from the foregoing law is that high and low interest accompany high and low wages, and that the rates of interest and of wages rise and fall together. Observation confirms this inference. Whether we merely regard the temporary changes in business, or whether we consider the more or less permanent condition of things in different countries at the same time, or in the same country at different times, it is evident that the more general, at least, among the temporary fluctuations of wages and of interest commonly coincide, and that not infrequently the more permanent differences in the rate of interest are conjoined with like differences in the rate of wages.* So evident is it that interest and wages rise and fall together in the ordinary fluctuations of trade, and that almost *pari passu*, that, in order to secure the immediateness of this result and avoid conflict or friction in readjusting their rates, the price of labor is frequently regulated by a sliding scale, so that it shall respond automatically to changes in the state of business and of the price of the finished commodities which it helps produce.

It is evident that changes or differences in the produc-

* The following is from an article on the early career of W. E. Forster: "It is easy to see by the condition of things described . . . clear indications that the mischief lay elsewhere than in the inadequacy of the wage fund. . . . Not only the seventeen hundred thousand of unemployed people, but also millions of idle capital, were, as we have seen, going a-begging for employment. Bankers and brokers were reported as refusing to take fresh money, and charging one or one and a half per cent. for loans on the Stock Exchange, and two and a quarter and two and a half for the discount of bills. Capitalists dared not embark their capital in any fresh ventures." *Contemporary Review*, September, 1886, p. 317.

tiveness of industry cannot affect the rate of interchange of labor and auxiliary capital. And this is but saying that the changes in wages and interest which arise from this cause apply equally to both. But not every change in wages and interest is due to change in the productiveness of industry. Some changes arise from causes which alter the rate of interchange or relative utility of auxiliary capital and of labor, and affect wages and interest divergently. When this is the case, a shifting of the balance between labor and auxiliary capital ensues. In some employments where that one whose price is relatively depressed was already at the least disadvantage, it grows in demand under the influence of cheapness, and supplants to a greater or lesser degree the one whose price is relatively augmented, so that a readjustment of equilibrium is gradually attained upon a new level.

To complete the theory of wages, it is necessary to inquire into the nature and the effects both of those causes which affect wages and interest concurrently and of those which affect them divergently. But before proceeding to this task it is incumbent upon us to consider more carefully the exact significance of the law of wages, so far as we have already determined it.

At the beginning of this paper, we recognized that the price of labor is not the same thing as the remuneration of labor. It is not therefore to be expected that we should be able to indicate at the present stage of the inquiry what the remuneration of labor — which is the real ultimate object of inquiry — actually is. But we might at least have hoped that the law of the price of labor which we have been at so much pains to establish would tell what the amount of that price is, measured in money. Unfortunately, the law of wages as above laid down not only fails to tell the amount of commodities obtained by the laborer, but it does not even tell what amount of money is actually

paid for labor. It indicates, and indicates only, the condition upon which the price is in equilibrium. But, as this condition requires that the wages paid for a certain amount of labor should be equal to the interest paid for the use of a certain amount of capital, it might seem to be a simple step to conclude from this the definite amount of money paid for wages. There are, however, two reasons why this does not follow. In the first place, our investigation does not show what amounts of labor and of capital are equally compensated; and even this knowledge would be useless unless we also knew the rate of interest on capital, and this we can never ascertain until we also ascertain the rate of wages. The rates of interest and of wages are mutually dependent, and neither can be definitely ascertained without at the same time ascertaining the other. Their laws are in reality but the two aspects of one and the same law,—that, namely, which we have heretofore laid down as the law of wages. A little observation will show that, while this law applies to wages, it applies conversely equally well to interest.

This may seem a negative and very empty result; but the knowledge which it gives as to the condition of equilibrium between interest and wages is of the utmost importance in itself, and also prepares us to enter with good hopes of success upon the further inquiry into the causes which engage equilibrium to settle at the exact point where it does rather than somewhere else.

IV.

The theory set forth in the preceding pages involves the assumption that in large numbers of operations the advantages of using labor and those of using auxiliary capital are not so widely separated as to preclude an active competition between those different methods of obtaining the same results. In some cases, both methods are actually and indifferently used under similar circumstances, and

their relative cheapness remains in suspense.* Such cases are of course limited in number and in extent. In the great majority of cases, there must be a difference between the cost of using labor and that of using auxiliary capital sufficient to be clearly recognized. And, however small this difference may be, it will under the same conditions always exclude the use of the less favorable method. But the conditions may vary; and the relative advantages of the two methods may, therefore, often be reversed.

Nothing, for instance, can be better established than the advantage of expensive machinery and plant in the textile industries, in transportation, and in the manufacture of nails. Yet to this day homespun clothes and rag carpets are used alongside of the products of the mills of Bradford and of Philadelphia; the hand nailer still plies his laborious and ill-paid task at the forges of the Black Country in Staffordshire; and in our own land blacksmiths are still probably found who make their own nails. Wagons and stages compete with railroads even in this country; while in Mexico carriers with packs on their backs and donkey-drivers with herds of asses carry freight at less rates than railroads, or at least did so recently.†

Almost every new process passes through a long period of trial, in which its comparative merits remain in suspense. Only gradually it gains a general acceptance. The old methods linger a long time under circumstances where their application continues to present equal or superior advantages.

* A coal-cutting machine, or a machine for moulding cast-iron pipes, takes the place of a great deal of manual labor. Machines for both these purposes are in practical use to a limited extent; but it is not yet positively demonstrated whether they are cheaper or dearer than labor. A decrease in interest, or in the other costs of operating them, or an increase in the price of labor, or even an interruption in the supply of labor, might insure their general introduction. Some operators, it is said, retain them for the especial purpose of averting strikes.

† I was told in the City of Mexico that resin for the use of the gas works was brought on asses' backs from the state of Morelos, some fifty miles distant, at less charge for carriage than by rail. This was in the spring of 1884.

Somewhere the advantages of the old process and of the new are about evenly balanced; and there a slight change in the cost of either would effect a great change in the relative extent to which each is employed.

About the dividing line where the advantages of machine methods and hand methods are evenly balanced, the price of labor's services will be found equal to the cost of the services of such auxiliary capital as would replace it. This line of equilibrium need not long remain stationary. It varies with every variation in the price of labor and rate of interest; it also varies with every improvement or change in the different methods. To-day it probably is other than it was yesterday or than it will be to-morrow. Machine methods steadily expand at the expense of hand methods. The cheapening of machine-made fabrics banishes from use antiquated homespuns and picturesque local costumes. A lowering of railway tariffs will some day stop the traffic of the Mexican donkey-driver. A rise of wages which should reach the poor nailers of Staffordshire would leave their forges cold and idle forever.

In many cases, the decision between the different methods depends upon the size of the market to be supplied; in others, it depends mainly upon the constancy with which tools can be used. While a machine stands idle, the interest on its cost keeps running; but labor can be discharged or turned to other work. A power crane represents a large class of expensive tools which accomplish the work of many men. It can only be used when its employment is tolerably constant, but it then effects a great saving. A steam plough may sometimes be profitable on a large farm, but never on a small one. A type-writing machine is only used where much copying is done. A calculating machine can only be profitably used where many similar calculations are carried on, as in the Massachusetts Bureau of Labor Statistics. (*Report to Columbus Convention, 1883, pp. 7 and 8.*)

A reaping machine dispenses with many laborers, with a binder attached it dispenses with many more ; but even in the United States the use of these machines is not universal. They compete to some extent even here with hand labor.

The agricultural processes of different countries are among the surest indices of the condition of the laboring population. In Germany, it is a common sight to see a cart drawn by a woman and a dog : where labor is dearer and money more plenty or the people a little easier, a horse releases both alike from their unnatural task. In the United States, where labor is dear, costly agricultural machinery is extensively used, in spite of the smallness of the farms : it is much used in England also, because there the farms are large ; and wages, although lower than in the United States, still far exceed those of other countries. In Russia, on the other hand, in Mexico, in Asiatic countries, and even in Southern Europe, we find the rudest tools : baskets are used instead of wheel-barrows, wooden ploughs instead of iron ploughs, or gangs of spade-men replace both the ploughs and the beasts which draw them. A part of this is no doubt due to sheer stupidity ; but much is also due to the price of labor and the rates of interest. The high cost of tools, and especially the difficulty of making repairs, in rude countries are additional drawbacks to the use of auxiliary capital.

In no country, perhaps, is common labor so cheap when compared with its efficiency as it is in Mexico ; and in few are the interest and the risk of employing capital so great. Machinery and tools are there of the rudest description. Scarcely anything is done by the use of fixed capital which it is possible to do by hand. Entirely different methods of silver mining and reduction are pursued to the north and to the south of the Rio Grande. It is sufficient explanation that sixty cents a day is higher wages beyond the frontier than three dollars on this side for equal work,

while the cost of machinery in Mexico is perhaps double. Asses are the one form of capital freely used by the Mexicans, but asses are there relatively as cheap as men.

The construction of water works affords an instance where the comparison of the cost of interest and the cost of labor is very direct. It is often a question whether to make use of a near source of supply, and pump by steam, or to go to a farther source, and utilize gravity. So far as cost is concerned, this question resolves itself into a comparison between the wages of engineers and firemen and the cost of coal (which is mostly wages) in the one case, and the interest on a longer pipe line, which may be necessary, in the other case.

In the foregoing examples, the competition between labor and capital is palpable and open. But this is not true of all the cases where auxiliary capital and labor displace each other; perhaps it is only true of the smaller part of them. Sometimes the choice between using auxiliary capital and labor assumes the form of a choice between articles produced mainly by the use of one or of the other, as is the case with the competition between natural gas and coal. The cost of mining coal, and especially that of mining soft coal, is little else than wages; while the cost of natural gas is almost entirely interest on the plant needed for its conveyance. The distance to which natural gas shall be carried is a question of the rate of interest and of the price of mining coal. Artificial gas, also, is more and more used as a substitute for coal; and its cost is largely interest on the expensive plant needed for its manufacture and distribution. Indeed, of all the many contrivances to save fuel, every one results in the outlay of additional capital and in economy in the amount of labor employed.

In the case of lighting, electricity appeals to almost exactly the same wants as gas; but the proportions of capital and of labor employed vary greatly between them. If a gas plant of given size is worth fifty thousand dollars,

and requires the labor of fifteen men in operating it and in mining coal, whereas an electric plant supplying the same number of lights is worth one hundred thousand dollars, and only needs the labor of ten men, who will deny that the relative cost of electric lighting and gas lighting depends on price of labor and on interest?

We have so far spoken only of cases where definite amounts of labor and of capital supplant each other, either directly or indirectly, in producing the same things; and we have been compelled for the sake of clearness to limit ourselves to simple and obvious cases. Industrial operations, however, commonly involve so many and such various factors that it is difficult or impossible to measure or contrast the amounts of labor and of auxiliary capital employed in each of the different combinations whereby the same things are produced; and yet it does not follow that the influence of their respective cost upon the selection made is less strong because it eludes observation. Furthermore, there are many cases of the displacement of labor or of auxiliary capital, the one by the other, where there is really no actual substitution, and where the change does not result in producing the same things. While the employer seeks every opportunity to substitute labor and capital for each other at a profit, he is just as earnest to discover and to stop every outlay which fails to yield to him the usual rate of profit. He scrutinizes every item of his expenditure. If any one item of labor is not repaid out of the product together with the usual business profit, he dispenses with it. If any auxiliary capital does not afford a full profit, he seeks some other use for it. He is equally alert in his search for new forms of profitable investment, both of the funds thus liberated and of any new accumulations. He will devote a part to buying labor and a part to employing auxiliary capital. How much shall go in each way, and whether in the old or in some new proportion, depends, in great part at least, upon the rates of wages and of interest.

One of the ways in which capital may be diverted from the payment of wages to auxiliary uses without directly supplanting any definite portion of labor is in the case of buildings. Where interest is high, there is too much use for money to sink it in costly buildings. We put up with cheap temporary structures. The reverse is the case where interest is low. In no country, perhaps, does the cost of employing capital both as to interest and as to risk bear so low a ratio to the price of labor as in England. Consequently, there is a lavish expenditure in fixed capital. An American arriving in England wonders at the massive docks on the Mersey; and he hears with amazement that the average cost of English railroads is two hundred thousand dollars per mile. But even in America the rate of interest has of late approximated to that which prevails abroad, while no similar reduction has occurred in the cost of labor. Therefore, rough sheds give place to costly depots of brick and stone; ten-story office buildings and apartment houses rise in our cities; and the steam ferries and wooden trestles which formerly carried our railroad trains are replaced by iron bridges costing hundreds of thousands of dollars.

But it is not only by the use of fixed instruments that capital is withdrawn from the purchase of labor. This is just as effectively done when large stocks of materials and goods are kept on hand, whereby the movement of circulating capital is retarded, and its distribution in wages made less frequent. Merchants and speculators may keep on hand larger or smaller stocks of goods. Manufacturers and shippers may hasten or slacken the processes of manufacture and transportation. All will be guided by the expectation of gain; and this reduces itself to a comparison of the interest it will cost to carry their wares with the saving in other costs of production, or with their estimate of the prospective advance in the price.

Where the processes of productive industry can be

hastened by the use of additional labor, as in floating logs down the rivers of Maine and New Brunswick, the question is whether the cost of such labor will or will not equal the interest saved. Where by protracting the duration of a process its products gain in quality and value, as happens with leather and wine, the choice of processes depends upon the comparison of the enhancement of value with the additional interest. In different countries a different selection may be made.

When interest is low and wages high, the employment of superfluous or unnecessary labor is carefully avoided; but large stocks of goods are freely kept on hand, both for productive and for speculative purposes. Low rates for money notoriously foster speculation; but, when a flurry comes over the money market, operators hasten to realize. In Europe, low rates of interest lead to a more general adoption than is usual here of the slower and the more perfect processes. In Scotland, vast quantities of pig iron are carried "in store," as a speculative investment, with the expectation of making interest on capital out of the rises in price which occur from time to time. Our Southern States are the world's chief producers of cotton; but the bulk of the crop soon gravitates to England, where the world's stock is mostly carried because of the difference in the rate of interest, which in the interior of Texas is not less than ten or twelve per cent., and in England is not more than three or four.

Where interest is high and wages are low, as measured in money or exchange value, there we find a scarcity of implements and scanty stores of goods; but labor is there used with profusion alike in productive and in unproductive employments. More hands are employed to do the same useful tasks, supernumeraries and drones are more readily tolerated, and domestic servants are employed in greater numbers. In Russia or Mexico or India, countries where labor is exceedingly cheap, a gentleman

scarcely ever travels without being accompanied by one or more servants; but he will find the hotels devoid of the most necessary and simplest articles of furniture. The feudal nobles were often poor in money, and their households were wanting in many conveniences which every mechanic's home can now afford, but, on the other hand, they were surrounded by domestics and retainers of high and low degree, in numbers which would be ruinous to the wealthiest nobles or bankers of our time. It was only possible to bear the charge of all this throng of followers and menials because the cost of labor was small. Remuneration, the food, clothing, and shelter obtained, may for the habits of that time have been ample; but it was paid in commodities which the feudal proprietor could have used in no other way. The money value of his herds and of his lands and crops was next to nothing: they could not be exchanged for money or for goods, and could only be used in this way, to swell his pomp and uphold his dignity and power.

We have hitherto spoken chiefly of the choice between different methods of producing the same commodity or commodities which are virtually the same. This is guided solely by the preference for cheapness.

The choice between industries which produce different commodities is guided in much the same manner. The amount which men desire of any particular commodity varies as its price varies. But cheapness is not here the sole motive of choice, and variations in price do not influence the demand for every commodity in the same degree. The demand for bread is but little affected by price; but the demand for seats at the opera is affected very greatly.

Observe how greatly the proportions of labor and of auxiliary capital employed in different industries vary. In growing wheat or raising garden produce, apart from the value of land, the outlay consists almost entirely of labor;

but in pasturage, on the other hand, an utterly insignificant amount of labor under some conditions is sufficient to care for vast sums of capital, as is the case on Western ranches or on Australian sheep-runs. The lace-maker requires no capital but a cushion and some thread. The prospector in our Western mining regions requires no capital but a grub stake and a pick and spade and basin. Little more capital than this is needed by the fisherman and the hunter. In making roads or in building dams or embankments, very little capital sets in motion great amounts of labor. On the other hand, in operating a railroad, a vast amount of capital is operated by a few laborers. In a water works, the proportion of labor is still less. In a water works on the gravity system, a plant worth one hundred thousand dollars may sometimes be readily managed by a couple of men.

It is not necessary to inquire here what may be the extent and the limits of the influence which cheapness exerts upon the choice between industries. It is sufficient to observe that, so far as this influence extends, low interest and a high price of labor encourage industries which employ large capitals and small amounts of labor, and men indulge freely in those gratifications which such industries provide; but that high interest and low-priced labor stimulate industries which employ much labor and little capital.

The choice between industries producing different commodities by different proportions of labor and capital, so far as it is guided by cost, is therefore decided in the same way as the choice between different methods of producing the same commodity; namely, by the relative cost of labor and of interest. Were it impossible that labor and auxiliary capital should supplant each other in the production of a single commodity, the demand for labor and for the use of auxiliary capital would still depend upon their relative cost or price; for it would depend absolutely and

directly upon the demand for the different commodities into which each respectively enters the most largely, and this demand, always supposing desire to be governed by cheapness alone, would depend in turn upon the price of labor and of interest. The relative demand for labor and for auxiliary capital would still depend upon the price of their use; but the process would be a little less direct than where the choice lies between different methods of the same industry.

The law of the price of labor would then assume this form: *Equilibrium can only exist in the price of labor and in the price of using capital when it is impossible to augment the sum of gratifications by supplanting industries employing a large proportion of one by industries employing a large proportion of the other.*

Among the industries between which desire is evenly balanced, there are some in which labor predominates, and some in which capital predominates. The price of labor which will produce any gratification in the former industries equals the cost of using capital to produce in the latter other gratifications equally esteemed by human desire. And the same prices will be paid for the use of labor and for the use of capital in all their employments as are paid for them here.

If the price of labor be excessively high, the price of those commodities into which labor most largely enters will also be high, and the demand for them will slacken. Employers will withdraw capital from their production in order to embark it in industries using a greater proportion of auxiliary capital. The demand for labor and its price will fall, and the use of auxiliary capital will grow at its expense until equilibrium is restored. Thus every departure of wages from their normal rate works its own cure.

But, in so far as desire rejects the guidance of cheapness and is led by the various human appetites, it may, according to the nature of those appetites, direct industry into

channels requiring much labor or into others requiring much capital. In the first case it stimulates and in the latter case it depresses the demand for labor. But the further consideration of this point lies without the scope of this paper.

V.

In this paper we have treated the wages question as a special case of the law of value and subject to the operation of supply and demand. We recognized at the outset that supply, being for moderate periods of time constant, the market price depends upon the demand, while the demand in its turn always depends upon price; and we set about finding the condition upon which equilibrium would establish itself in these things. In so doing, we were obliged to define wages; and, in the only sense in which wages influence demand, they mean the money price of the services of labor.

We have seen that capital and labor compete with each other for employment, being able often to supplant each other and to render the same or equally desirable services; and we have noticed how greatly the amounts vary of the capital and of the labor which can do this in different employments.

Where the smallest amount of capital will supplant the largest amount of labor, there the advantage of employing capital is greatest, and there capital will be exclusively employed: where the least amount of labor will supplant the largest amount of capital, there the advantage of labor is greatest, and there labor will be exclusively employed. The advantages of labor over capital and of capital over labor shade off from these points in an infinite number of successive and minute gradations until they finally merge at a point where labor and capital can be indifferently used with equal advantage and profit to the employer.

At this point, the same price must be paid for the services of labor as for the same or for equal services ren-

dered by capital. We accordingly reach this formula: *The same price, whether it be called wages or interest, is paid for that amount of labor and for that amount of capital which can supplant each other and render the same services in those industries where their relative superiorities merge, or which can in different industries render services equally esteemed by effective desire. And the same prices as are paid in these cases for labor and for the use of capital are also paid for them in all their other employments.*

It seems to follow from this that in a certain sense wages and interest are the same thing; that is to say, that they are paid indifferently by the employer for services which, although rendered by very diverse and competing agencies, are to him equivalent. This conclusion accords with the fact that high or low rates for interest and for wages often coincide, and that their fluctuations to a great extent happen and progress concurrently.

To complete the theory of wages, it remains to inquire at what point labor and capital do actually supplant each other, and what are the causes of wages and interest being really high or low. These causes are all comprised in the state of nature and of the arts, in the supplies of labor and of capital, and in the character of human appetites. Space forbids our entering further upon these topics here.

STUART WOOD.

THE AUSTRALIAN TARIFF EXPERIMENT.

The rival policies of protection for domestic industries and tariff for revenue only have been tried in Australia, side by side, under conditions enough alike and for a long enough time to give value to a comparative statement of the progress made by New South Wales and Victoria. The latter is the smaller and the younger of the two. It was created, however, simply by cutting off a portion of New South Wales; and it has had a separate existence for nearly forty years. The discovery of gold mines drew population rapidly into the younger colony; and for a time it had a larger population than the mother colony, in which the mining excitement had somewhat abated. Each colony controls its own affairs. Victoria early adopted the protective system. New South Wales adheres to free trade, or, more exactly, a tariff for revenue only. In 1886, the colonial legislature made a movement in the direction of protection, imposing many new duties and advancing old ones; but this step was retraced at the very next session of the legislature. The colonies adjoin each other. Melbourne and Sydney are the commercial rivals of the Australian continent. Each colony is entirely satisfied with its own fiscal system. We observe one important fact at the very threshold of this inquiry; namely, that States may exist side by side under the two antagonistic policies, and neither will drive the other out of existence or into bankruptcy.

Since 1870, the growth of population has been more rapid in New South Wales than in Victoria.* In the year mentioned, the former colony had 520,000 inhabitants, and the

* The facts regarding these colonies here stated are taken from *The Colonial Civil List* for 1887; Keltie's *Statesman's Year-book* for 1888; Mr. Hayter's comprehensive and well-arranged *Victorian Year-book* for 1886-87; the *British Colonial Statistical Abstract* for 1886; and, some previous years, a semi-official publication entitled *An Essay on New South Wales*, by C. H. Reid, Sydney, 1876; and reports from Mr. Griffen, United States consul at Sydney, in the monthly publications of *Consular Reports* for March and November, 1887; and in special issue No. 40, *Consular Reports*; and the *Handbook to the Statistical Register of New South Wales*, 1886, by T. A. Coghlan, government statistician.

latter had 780,000; in 1880, New South Wales had gained substantially on the other, having 730,000 inhabitants to 860,000 in Victoria; in 1886, New South Wales had practically caught up with Victoria, the former having a population of 1,001,966 and the latter of 1,003,043. In sixteen years, the population of the free-trade colony had nearly doubled, and that of the protection colony had increased thirty-seven per cent. The *Victorian Year-book* gives only immigration and emigration by sea; and Mr. Hayter points out that there are now ample facilities for moving from one colony to another by land, and that at Victorian ports immigrants in transit are counted, so that in the case of his own colony the numbers of immigrants and emigrants are liable to overstatement. The figures show that in the thirteen years, 1873-86, Victoria received 741,180 immigrants, and lost 614,906 emigrants; New South Wales received 669,795 and lost 376,461, so that the protection colony's net gain from immigration was 126,274, and the free-trade colony's net gain was 293,334.

During the six years, 1881-86, Victoria made a net gain of population from all the Australasian colonies except New South Wales amounting to 83,657; but during this period her net loss to New South Wales was 27,961.

During the eight years, 1879-86, the free-trade colony disposed of nearly three times as much land as the protection colony; but this would seem to be due to the higher price at which Victoria held her public domain, and the greater amount of grazing in New South Wales. The latter sold and granted more than forty-six and a half million acres of land at a little less than twenty shillings an acre; while Victoria disposed of less than fifteen million acres at a trifle more than thirty shillings an acre. Victoria greatly exceeds New South Wales in the production of wheat, barley, oats, potatoes, and wine; and New South Wales produces about fifteen times as much maize as Victoria. With an equal population, New South Wales had in 1886 considerably more horses, cattle, and sheep than Victoria.

Between 1880 and 1886, New South Wales increased its railroad mileage from 849 to 1,935; while Victoria increased its railroad mileage only from 1,199 to 1,753. The smaller

area of Victoria renders a large mileage less necessary than in New South Wales. The cost per mile of railroads at the end of 1885 was for Victoria £13,634 and for New South Wales £11,994; but this difference is explained by the fact that in Victoria all railways have a gauge of five feet three inches, while in New South Wales, with the exception of one line having that gauge, the standard American gauge of four feet eight and a half inches has been adopted. In 1885, New South Wales had 10,351 miles of telegraph and Victoria had 4,094, which may also be accounted for by the difference between the areas of the two colonies. Large as this difference of area is, in each of them the total population is so small compared with the area that, so far as land is concerned, the two colonies are in practically the same economic condition.

The bank deposits of Victoria were in 1870 largely in excess of those of New South Wales, being £10,899,026 in the former and £6,107,999 in the latter; in 1875, the bank deposits in the two colonies were almost exactly equal, being for each colony a little more than thirteen million pounds; in 1886, they were £31,239,472 in Victoria and £28,428,253 in New South Wales. In each colony, the aggregate bank assets had increased between 1881 and 1886 from less than twenty-eight to more than forty-one million pounds. In 1887, the liabilities of the banks, exclusive of capital, were £35,681,420 in Victoria and £31,739,090 in New South Wales; and the assets were £43,623,030 in Victoria and £42,095,290 in New South Wales. On the 30th of June, 1887, the ratio of bank liabilities to assets was 75.10 per cent. in New South Wales and 81.68 per cent. in Victoria.

The savings banks statistics show immense gains between 1881 and 1886. In 1871, the deposits were £930,000 in New South Wales and £1,100,000 in Victoria; in 1881, they were £1,500,000 in the former and £1,600,000 in the latter; in 1886, they were £3,504,804 in the former and £3,431,000 in the latter. Mr. Hayter gives two statements of the number of depositors and the amount of deposits in Victorian savings banks in 1886, without offering any explanation. They evidently are statements for different dates in the same year. The

numbers of depositors in New South Wales in the three years indicated were 21,000, 32,000, and 111,944, and in Victoria 38,000, 76,000, and 194,631. According to these figures, in 1871 the average deposit was £44 in New South Wales and £29 in Victoria; in 1881, it had risen to £47 in the former and fallen to £15 in the latter; and in 1886 it had fallen in New South Wales to £31 6s. 2d. and risen in Victoria to £17 12s. 7d. But the total number of depositors given in the *Victorian Year-book* is the sum of the depositors in the general savings banks and the depositors in the post-office savings banks; and probably a great many persons are depositors in both. The figures given in the *New South Wales Hand-book* show that in 1886 the general savings banks of New South Wales contained £2,081,498, belonging to 52,378 depositors, an average of £39 15s. each. The post-office savings banks held £1,423,305, belonging to 59,566 depositors, an average of £23 18s. Mr. Hayter's figures for Victoria the same year show 111,031 depositors and £2,322,959 of deposits in the general savings banks and 78,328 depositors and £1,266,957 deposits in the post-office savings banks. In the former, the average deposit was £20 18s. 5d., and in the latter £16 3s. 6d. Assuming that no persons have deposits in both kinds of banks, and that the total number of depositors in Victoria is 194,631, as Mr. Hayter states in one place instead of 189,359 as he states in another, 19.4 of the population of Victoria and only 11.17 per cent. of the population of New South Wales are depositors; but the average deposits are much larger in the latter colony, and the aggregate of deposits in New South Wales has gained rapidly on that of Victoria. On the basis of population, the average deposit in New South Wales would be a trifle the larger. All the post-office savings banks pay 4 per cent.: the general savings banks pay 4 per cent. in Victoria and 6 per cent. in New South Wales.

In both colonies, the eight-hour working day prevails. The following are the rates of wages in the two colonies, so far as the tables in the *Victorian Year-book* and the *New South Wales Handbook* admit of comparison:—

	New South Wales.	Victoria.
Masons,	11s.	10 to 12s.
Bricklayers,	11s.	10 to 12s.
Plasterers,	11s.	10 to 12s.
Carpenters and joiners,	9s.	10 to 12s.
Painters,	9s.	8 to 10s.
Laborers,	8s.	6s. 6d. to 10s.
Slaters,	10 to 12s.	10 to 12s.
Iron moulders,	8s. to 9s. 4d.	8 to 12s.
Plumbers and gas-fitters,	10 to 11s.	10s.
Boiler-makers,	10s.	10 to 14s.
Shipwrights,	11 to 12s.	13s.
Farriers (per week),	35 to 55s.	35 to 50s.
Blacksmiths,	6 to 10s.	10 to 14s.
Tinsmiths,	7 to 9s.	6s. 8d. to 10s.
Tailors (per week),	50 to 60s.	50 to 60s.
Pressers (per week),	50 to 60s.	40 to 55s.
Compositors,	13 to 14d. per M.	13d. per M.
Upholsterers,	10 to 12s.	7s. 6d. to 10s.
Coopers (per week),	40 to 50s.	54 to 60s.
Quarrymen,	7s. 6d. to 10s.	8 to 12s.

Mr. Hayter states that in 1886 the unemployed in New South Wales numbered 9,813, and in Victoria only 4,478.

Consul Griffen, in a report to the State Department, dated June 11, 1888, presents a statement that the annual average consumption of sugar for each individual is 92½ pounds in Victoria and 102 pounds in New South Wales. And he says: "An interesting fact in connection with the consumption of sugar in the two colonies is that sugar is not the only luxury which is more largely used in New South Wales than in Victoria. The population of the two colonies is about the same; but the average consumption of tea, currants, raisins, beer, spirits, tobacco,—indeed, almost every luxury except coffee,—is heavier in New South Wales than Victoria. . . . Mr. Pulsford, to whom I am indebted for this comparison, is very decided in the opinion that the well-being of the two populations can be shown by their relative spending powers. He thinks these comparisons very significant, and in endeavoring to explain why the people of New South Wales consume more sugar, currants, tobacco, beer, spirits, etc., than the people of Victoria, says:—

"If the people of New South Wales took more spirits and less tea than the Victorians, the case would look different; but, when we find that New South Wales is ahead in both intoxicants and non-intoxicants, we must be very dull scholars if we cannot understand the reason why.

Sugars and dried fruits also, which in the form of lollies and cakes represent so much enjoyment to the children, are bought much more freely in this colony. A portoin of this excess is probably due to the fact that the population of New South Wales represents a greater effective or working power than that of Victoria. But this is far more than outweighed by the fact that the average duties on the articles are much higher in New South Wales than in Victoria : thus sugar pays 5s. (\$1.22) per hundred pounds duty against only 3s. (73 cents) in Victoria, and spirits pay 12s. (\$2.92), both customs and excise, while in Victoria the excise is 8s. (\$1.95) and 10s. (\$2.43). Of course, if the duties in New South Wales on these articles were as low as they are in Victoria, the consumption in New South Wales would be still larger."

As the prime object of a protective tariff is to promote manufactures, it is a fact of great importance that, according to Mr. Griffen, the horse-power of the factories in the free-trade colony in 1887 was 25,192 against 20,160 for the protection colony ; and the manufacturing industries of the free-trade colony employed 45,783 persons, and those of the protection colony employed 49,297, with the qualification that several trades which are included in the Victorian statement are not included in the statement for New South Wales. Mr. Griffen believes that, with this correction, the manufactures of New South Wales employ as many persons as those of Victoria ; while the value of the manufacturing plant in the former is estimated at \$25,000,000, and that of the latter at \$23,270,000. Mr. Keltie's figures differ from these mainly in giving a most disproportionate valuation to the manufacturing plant in Victoria. According to him, in 1886 New South Wales contained 3,694 manufacturing establishments, employing 45,753 persons, having engines of 25,192 horse-power, and valued at £5,801,757 ; while in 1887 Victoria had 2,770 establishments, of which 1,440 had engines with a horse-power of 20,000, employing 45,773 persons, with a plant valued at £11,028,000. It is quite possible that some elements in the value of the plant in Victoria were not included in New South Wales.

The woollen industry is not protected in New South Wales : in Victoria, it is protected by duties ranging from $7\frac{1}{2}$ to 30 per cent. In neither colony has the manufacture of woollens yet become an important industry. In the free-trade colony, the number of persons it employs is not only small, but growing

smaller, although, measured by the product, the woollen manufacture is not running down much. The number of persons employed and the yards of material turned out for five years are as follows :—

Year.	Employees.	Yards of cloth.
1882	385	319,225
1883	372	352,000
1884	312	305,000
1885	323	337,750
1886	182	324,788

The Victorian mills employed 750 persons in 1882, and 980 in 1887. In this last year, however, there was a decrease, as compared with 1886, of one mill (leaving eight in operation), of 3,232 spindles, of 146,489 pounds of wool consumed, of 76 employees, of 119,215 yards of piece goods, and 398 pairs of blankets manufactured, against which there was a gain of 48 shawls made. In fact, the Victorian woollen industry seems to be in a discouraging condition. Mr. Griffen reports :—

At the last session of Parliament, an additional ad valorem duty of five per cent. was added; but the manufacturers have ever since been clamoring for a still farther increase. Mr. Munro, a member of the Victorian Parliament and a manufacturer, stated recently in the Assembly that the mill with which he was connected lost the whole of its capital, \$90,000, of which \$15,000 had been subscribed by himself; and that the woollen industry of the colony was on the verge of ruin. The Ballarat Mill, he said, which was regarded as the most substantial in Victoria, had not paid a profit for years; and an ad valorem duty of twenty per cent. might possibly enable the mills to struggle along for a few years. Then they would die an agonizing death. He did not think that even fifty per cent. ad valorem duty would make them profitable to their owners.

The woollen protection of Victoria, which has failed thus far to make the manufacture of woollens profitable, has not done a great deal to encourage sheep-raising. New South Wales contained 17,560,000 sheep in 1872, over 35,000,000 in 1880, nearly 38,000,000 in 1883, and 39,169,304 sheep in 1886. During each of these years, the number of sheep in Victoria was between ten and eleven millions. In 1872, Victoria had more than half as many sheep as New South Wales; in 1886, it had but little more than one-fourth as many. The wool export of New South Wales was nearly fifty per cent. more

than that of Victoria in the years 1880, 1881, 1882, and considerably more than fifty per cent. in excess in the years 1883, 1884, 1885, 1886. A large portion of the wool exported from Victoria is produced in the adjacent colonies.

The manufacture of boots and shoes is protected in Victoria, and not in New South Wales. Naturally enough, New South Wales imports boots and shoes much more freely than Victoria. In 1886, the imports by the former amounted to £582,318, and those by the latter to only £105,828. But in the same year New South Wales exported £23,164 worth of home-made and £80,673 worth of imported boots and shoes, a total of £103,837; and Victoria exported only £20,926 worth of home-made and £28,334 worth of imported boots and shoes, a total of £49,260. During the five years, 1882-86, New South Wales exported fifty-five thousand pounds worth of boots and shoes made in the colony more than Victoria did. The boot and shoe industry in New South Wales employed 2,272 persons in 1886, and during a term of years the number was slowly increasing. The boot and shoe export of Victoria in 1879 amounted to the considerable sum of £128,217, or more than two and one-half times what it was in 1886. In fact, the export in 1886, although larger than in 1885, was smaller than it was so long ago as 1872. The following passage, from the report of a committee to a meeting of the boot and shoe manufacturers of Melbourne, is quoted by Mr. Baden Powell in his article in the *Contemporary Review* for March, 1882:—

Our travellers report to us that they find very great difficulty in placing our orders on the neighboring markets, principally through the competition of Sydney, with their own manufacture and European imported sold sufficiently low to secure the custom. It must be remembered that Sydney has always had a steady export of her own manufactures, and that her manufacturers are giving inducements to our best work people to remove there. It also must be remembered that all leathers—the boot manufacturers' raw material—are admitted free into the port of Sydney; while an import duty of seven and a half, ten, and twenty per cent. is enforced in Victoria, thereby placing the Sydney manufacturer at an advantage.

The fact that three years after this complaint of the protected shoe manufacturers their export trade had fallen to forty per cent. of what it was three years before their com-

plaints indicates that they continued to find it difficult to place their orders in competition with the shoe manufacturers of the free-trade colony, and continued to lose their best workmen to Sydney.

Taking the manufacturing industries of Victoria in a mass, it appears from the colonial *Year-book* that in 1887 there was a decrease, as compared with 1886, of 14 establishments and 3,193 employees in all the concerns, exclusive of flour mills, breweries, distilleries, brick-yards, potteries, tanneries, fellmongeries, wool-washing establishments, woollen mills, soap, candle, and tobacco factories. Including all of these, there was a decrease of 43 in the number of establishments and 3,524 in the number of employees.

The number of persons employed in all manufacturing processes steadily increased in New South Wales from 25,714 in 1879 to 45,783 in 1886. In the latter year there were engaged in making agricultural and dairy implements 281 persons; boots and shoes, 2,272; clothing, 3,260; in iron and brass foundries, 1,292; in machinery and engineering, 2,197; in other metal industries, 3,449; in building materials, 9,187; ship building and repairing, 1,077; furniture, bedding, and the like, 1,380; books, paper printing, and engraving, 3,659; and in carriage works, 1,917.

As we should expect especially protected industries in Victoria to show a development beyond that of like industries in New South Wales, so we should expect the commerce and shipping of the latter to exceed that of the former. Here the results are less disappointing. In the ten years, 1876-85, New South Wales built 627 vessels, with a tonnage of 41,500; and from year to year there was generally an increase. In the same period, Victoria built 80 vessels, with a tonnage of 3,811, the business generally, and in the last five years rapidly, diminishing. The steam and sail shipping owned in the two colonies in 1885 was 67,517 tons for Victoria and 122,293 tons for New South Wales. During the ten years, 1877-86, the aggregate tonnage of vessels entering and clearing for the two colonies was 26,122,782 tons for Victoria and 32,818,029 tons for New South Wales. In 1886, 97.05 per cent. of the ships arriving in Victorian ports came with cargoes and 2.95 per

cent. came in ballast, while only 73.11 per cent. sailed with cargoes and 26.89 per cent. sailed in ballast. Numerically, 68 ships arrived in ballast and 625 sailed in ballast. In tonnage, 1.01 per cent. arrived in ballast and 24.34 per cent. sailed in ballast. On the other hand, of the shipping that entered and cleared from ports in New South Wales in the seven years, 1880-86, 10,513,392 tons came with cargoes and 2,240,556 tons came in ballast, 12,539,808 tons sailed with cargoes and 227,064 sailed in ballast. In 1886, 1,760,649 tons entered with cargoes and 353,969 entered in ballast, 2,103,351 sailed with cargoes and only 40,635 sailed in ballast. For 1886, 16.74 per cent. of the tonnage entered in ballast and 1.89 per cent. cleared in ballast. For the seven years, 17.54 per cent. entered and 1.8 per cent. cleared in ballast.

The protective system is intended specifically to diminish importation, and is also expected to prevent money from going out of the country. For the seven years, 1880-86, the balance of trade was against both these colonies; but, taking specie and bullion out of the account, the balance of trade in merchandise against Victoria was more than £11,000,000 greater than it was against New South Wales. The free-trade colony imported £13,000,000 worth more than Victoria did, but it also exported £24,000,000 worth more than Victoria did. The imports of New South Wales for the seven years were £140,866,417, of which £9,972,875 was specie and bullion. The total imports of Victoria were £123,544,154, of which £5,879,481 was specie and bullion. The exports of New South Wales amounted to £118,522,629, of which £10,531,758 was in specie and bullion; and the exports of Victoria amounted to £108,201,103, of which £24,687,791 was in specie and bullion.

In 1886, New South Wales imported nearly twice as much machinery as Victoria, but did not import quite so much iron and steel. The former imported five times as much of the manufactures of leather and more than twice as much of linens, woollens, drapery, and haberdashery as Victoria did. Both colonies re-exported much of their imports.

The Victorian exports in 1886 were four and a half million pounds sterling less than in 1881 and two and a half millions

less than in 1876. The articles showing an increase in 1886 over both the previous dates were potatoes, tea, hides, soap, hay, and straw. Wine, candles, bark, and tin ore show an increase over 1881, but a decrease from 1876. Books, clothing, butter and cheese, breadstuffs, skins and pelts, leather, copper ore, and live stock show an increase over 1876, but a decrease from 1881. In trading with the other colonies, Victoria exported more than she imported in 1883, when the excess was £85,926; but in all the other years from 1876 to 1886 she imported from the other colonies more than she exported to them, and the excess was in one year over two million pounds sterling, in four other years over one million pounds, and in four other years over six hundred thousand pounds per annum. In 1886, Victoria imported from New South Wales goods worth £4,350,871, and exported to New South Wales goods worth £2,624,713. Victorian exports for 1886, as compared with 1885, show increases of £420,464 and decreases of £4,176,901, a net decrease of £3,756,437; and of this the decrease in exports to her free-trade neighbor was £1,181,861. Victoria imported from New South Wales more than twice as much as she exported to New South Wales in 1871 and nearly twice as much as in 1881. In 1885, New South Wales outranked Victoria in the total value of her exports of home production and in the value per head of population of the exports of home production.

The value of exports of Victorian manufactures for a series of years affords little evidence of advantage given Victoria by her tariff in her competition with the other Australian colonies. The exports of stationery show a decrease for every year from 1888 to 1886, both included; in agricultural implements there was a decrease from 1882 to 1884, and a small increase in 1885 and 1886; in machinery there was a decrease annually from 1883 to 1886; in saddlery and harness, the decrease runs from 1882 to 1886; in furniture and upholstery, it runs from 1883 to 1886; in woollens there was a continuous decrease from £15,692 in 1882 to £2,751 in 1886; in apparel, the decrease runs from 1882 to 1886, except that it was smaller in 1883 than in 1884; the export of boots and shoes decreased from £47,250 in 1882, year by year, to £20,926 in

1886; the export of cordage decreased from 1884 to 1886; the exports of butter and cheese, hams, bacon and lard, beef and pork, preserved meats, wool, and wheat decreased from 1884 to 1886, the decrease in wheat being from £1,426,905 to £165,391; the export of refined sugar and molasses decreased from 1883 to 1886, while that of wine increased steadily from 1880 to 1886; the export of leather decreased from 1883 to 1886; and the export of hardware decreased from 1882 to 1885: in 1886 there was a slight increase, but the export then was only £20,834 as against £69,415 in 1882.

In the absence of farther information, we can draw no particular conclusion from the fact that mortgage loans in Victoria increased year by year from £6,672,733 in 1881 to £12,224,992 in 1884, except that, as the number of loans increased only one-third, the debtors seemed to be increasing their borrowings. In New South Wales, the mortgages increased from 4,505 for £5,268,449 in 1881 to 6,933 for £7,570,210 in 1886.

The Australian experiment indicates that a protective tariff may foster particular industries, though in Victoria the woollen industry is unprofitable, and it is not clear that the boot and shoe industry is well established. It can divert capital and labor from certain channels into others, but it is not shown that it increases the aggregate wealth and prosperity of the community or the number of persons engaged in manufacturing enterprises as a whole. It does not draw immigrants; and it naturally represses ship-building and commerce, which is one of its principal objects. It has little influence, if any, upon the rate of wages. It must amount to something very near prohibition before it can greatly reduce importation and prevent an adverse balance of trade. The customs revenues of New South Wales and Victoria are about the same, so that the convenience of collecting the public revenues at the custom-houses can be secured without invoking the principle of protection.

FRED. PERRY POWERS.

NOTES AND MEMORANDA.

THE annual meeting of the *Verein für Socialpolitik* was to take place this year at Frankfurt on September 28 and 29. Professor Miaskowski and Dr. Thiel were to present a report on usury in agricultural districts, on the means of doing away with it, and especially on the organization of credit for the peasantry. Professor Conrad and Dr. Crüger were to report on the extent to which prices are raised by retailers and other middlemen, and on possible remedies against abnormal prices. The last-named gentleman has been closely connected with the co-operative movement, and was to discuss the effect of distributive co-operation. We may mention in this connection that any person may join the *Verein* by sending his name to the secretary, C. Geibel, publisher, Leipzig, and will receive its publications on transmitting 10 marks yearly to that officer.

THE figures for the cotton year, ending September 1, show that the crop of 1887-88 exceeded 7,000,000 bales, being the largest ever gathered in the United States. Down to the war, 4,000,000 bales had been reached only once, in 1859-60. That line was again passed in 1870-71 and in 1873-74; and, beginning with 1875-76, the crop began to run permanently above it. The yield for the last ten years is given by the *Commercial and Financial Chronicle* of September 15, in a review of the cotton year, as follows:—

<i>Bales.</i>		<i>Bales.</i>	
1878-79 . . .	5,073,531	1883-84 . . .	5,714,052
1879-80 . . .	5,757,397	1884-85 . . .	5,669,021
1880-81 . . .	6,589,329	1885-86 . . .	6,550,215
1881-82 . . .	5,435,845	1886-87 . . .	6,513,623
1882-83 . . .	6,992,234	1887-88 . . .	7,017,707

The above figures tell their own story as to the industrial regeneration which the South has undergone, and the solid basis on which the prosperity of that region is now established. Hardly less significant of change, though on a smaller scale,

are the figures as to the transportation of cotton by overland routes, which are now gaining at a rate inconceivable before the better organization of our railway system:—

	<i>Shipped overland.</i>
1883-84	1,049,070 bales
1884-85	991,960 "
1885-86	1,260,279 "
1886-87	1,292,167 "
1887-88	1,441,920 "

In our April number (page 347), we noted the passage of an Austrian act for compulsory insurance of workmen against accident. This was followed by an act for compulsory insurance against sickness, and an account of both measures has been given by Dr. M. Ertl in the *Jahrbuch für Gesetzgebung*.

The act for insurance against sickness, like its predecessor for insurance against accident, follows the general lines of the legislation on the same subjects in Germany. It diverges from the German model in that the whole system is supervised by the government of the Empire, whereas in Germany, though the system is the result of imperial legislation, its administration is left in the hands of the several states. It is part of the same divergence that the associations which carry the insurance against sickness are organized by judicial districts, and not, as in Germany, by towns and communes. And since, by the earlier act, the associations for insurance against accident are also organized geographically, it is natural that the general supervision of the whole system of insurance against both accident and sickness should be put in the hands of a central Insurance Bureau.

In most other respects, the German example is followed. Employers are responsible for the contributions, but are entitled to deduct from wages two-thirds of what they pay. The sick-pay is sixty per cent. of common laborer's wages; and, in addition, expenses of cure are defrayed, and a small funeral allowance is made. Agricultural laborers are not affected, unless their employers voluntarily join the system, the insurance of this class being left to the legislation of the separate states of the Empire.

THE annual report of the Bank of France for 1887, given in the *Économiste Français* for September 8 and 15, presents some facts of interest as to the character of the paper discounted by the bank and its branches. The total amount of discounts for 1887 was 8,268,658,000 francs, made up by 11,579,661 pieces of paper. For each piece, the following calculation is made:—

	Paris.	Branches.
Average amount,	745.90 fr.	688 fr.
“ time to run,	22.4 days.	29 days.

The average sum represented by each piece was smaller than in 1886 by 21 francs in Paris and by 13 francs in the country, and the average time to run fell off two and a half days in Paris and one day in the country.

The classification of the paper discounted at Paris, 5,188,490 pieces, amounting to 3,869,744,600 francs, shows this remarkable proportion of paper of the smallest classes:—

13,755	pieces of 10 francs or less;
677,590	“ “ 11 to 50 francs;
977,455	“ “ 51 to 100 francs;
1,668,800	“ “ 100 francs or less.

The number of these minute notes discounted by the bank is still steadily increasing:—

1881,	paper for 100 fr. or less,	1,160,945	pieces.
1882,	“ “ “	1,224,326	“
1883,	“ “ “	1,349,270	“
1884,	“ “ “	1,581,515	“
1885,	“ “ “	1,590,839	“
1886,	“ “ “	1,592,673	“
1887,	“ “ “	1,668,800	“

In connection with this statement as to the amount of small paper flowing into the bank from the *petit commerce*, the report as to overdue paper at Paris is worthy of note:—

Dec. 27, 1886, paper overdue and charges,	1,302,124 fr.
Recovered in 1887,	587,064
Dec. 24, 1887, balance overdue,	715,060 fr.

“It is to be remarked that in the course of the year 1887 we have had no failure of payment in our Paris portfolio.”

This remarkable result is no doubt due to the fact that the paper in question had passed through one or two hands, and

was finally rediscounted by the bank, with, at least, one important indorsement. But still the small losses experienced by the Bank of France, even in revolutionary crises of the worst sort, like that of 1871, show the solidity of the mass of small dealers, for whom the bank is indirectly the constant resort.

PROFESSOR LUJO BRENTANO, on assuming the chair of political economy at the University of Vienna in April last, chose for the topic of his inaugural address "The Classic School of Political Economy," and discussed it with even less moderation than might have been expected from his previous utterances. The classic school is roundly condemned. Its doctrines as to wages and distribution are declared to be quite worthless, and the theories of Marx and Rodbertus appear once more as legitimate deductions from Ricardo's system. The following passage is characteristic:—

If it be true, as all competent observers agree, that the economic, moral, political, and social condition of English workmen is to-day immeasurably better than it was in 1840, the reason is simply that the doctrines of classic political economy on capital and labor, and the iron law of wages which goes with those doctrines, were absolutely false.

Nor is the doctrine of rent treated with more respect, while even the theory of money is said not to have been advanced by the classic writers. It is not surprising, after these criticisms, to be told that the history and description of industry are the most important tasks for the economist, and that the description of even the most modest of industrial phenomena is worth more than the acutest deductions from the selfishness of "the economic man." These remarks indicate an intention to counteract the tendencies fostered at Vienna by Menger and by other Austrian scholars, against whom, indeed, the address seems in great part directed. In a foot-note to the address as published, Brentano goes so far as to say that neither in their conception of human nature nor in the objects they sought to attain was there any difference between the mercantile and the classic writers. The only difference lies in the means by which they sought to obtain their ends. Perhaps it is a sign of Philistinism that he should yet refer with

admiration to the investigations of Thünen, who may justly be called the German Ricardo. Certainly, this address shows no such tone of moderation and conservatism as has begun recently to appear in the writings of distinguished German economists.

THE Imperial Statistical Bureau of Germany has published the results of the operations of the system of compulsory insurance against sickness for the year 1886, the first entire year for which the system was fairly in operation. Some of the figures are interesting. About 4,500,000 persons were insured, among whom there were 1,710,000 cases of sickness and 26,300,000 days of sickness. The total expenses were 58,750,000 marks, of which 53,000,000 were actually spent in relief,—medical care, medicine, money payments,—so that the average day of sickness was relieved to the extent of two marks. The expenses of administration, on this showing, are certainly not unduly large. The total receipts were 62,130,000 marks.

Another way of presenting the operations of the system is by comparing the various methods of insurance between which the sick insurance act leaves a choice. The total receipts, the payments by workmen (it will be remembered that workmen are charged only two-thirds of the contribution paid by their employers), and the payments for relief were as follows for each person for the more important classes of associations :—

[Figures denote marks.]

	Receipts from all sources per workman.	Payments by each workman.	Relief to each workman.	Excess of relief over payments.
Ortskrankenkassen,	14.9	10.1	11.9	1.8
Betriebskrankenkassen,	16.8	11.2	14.6	3.3
Hilfskassen (registered),	14.6	14.6	12.6	2.*
Communal insurance,	7.9	5.3	8.3	3.

* Deficiency.

In all cases, the workman got more than he paid, except in the registered *Hilfskassen*. These are voluntary friendly societies, which cannot levy on employers or on the public, and of course must pay expenses. Barring this exception, the workman received more or less of gratuitous aid, apparently

either from his employer's contributions or from taxation. It should perhaps be stated that *Ortskrankenkassen* are associations formed by the public authorities by grouping a number of similar establishments and occupations together. *Betriebskrankenkassen* are formed of one or more establishments in the same trade. Communal insurance appears to yield least to the workman, and yet he pays a less proportion of the expenses than in other cases.

The scale on which the legislation for compulsory insurance is being carried out is illustrated by the report for 1887 on sick insurance in Berlin. We take the following figures from the abstract of this report, prepared by Mr. Mugdan for *Die Arbeiterversicherung*. The total number of persons insured in Berlin was,

At the close of 1885,	212,649
“ “ 1886,	231,841
“ “ 1887,	261,160

By far the largest number of these (237,257 in 1887) were insured in the *Ortskrankenkassen*. The largest single association of this kind is the general *Kasse* for men and women engaged in industrial pursuits and not insured elsewhere, which had nearly 62,000 members. The *Betriebskrankenkassen* had, in 1887, a total membership of 17,893.

As the number of cases of sickness does not increase so fast as the number of members, Mr. Mugdan concludes that “the associations, after all, have made progress in checking cases of pretended sickness.”

It is reported that the Russian minister of finance has instructed the Bank of Russia to make a fresh issue of inconvertible paper, to the extent of 15,000,000 roubles. The issue is made nominally on the security of gold held by the bank for the imperial treasury; but, as the notes are not convertible and the holder has no means of enforcing this supposed pledge, the issue is in effect merely so much added to the volume of paper currency, already depreciated by excess. The addition is made in order to meet the increased autumn demand for currency, which, in Russia as in other agricultural countries, drains currency from the bank or other central reservoir at the time when the crops are seeking their market.

This demand for more paper in order to move the crops will have a familiar sound to those who recall the experience of this country under the suspension of specie payments. The demand for more paper in Russia is also referred to as evidence of the increasing trade of the country and the demand for a more ample medium caused by growing prosperity. This, again, is a view of the case once familiar here, and a fresh illustration of the ease with which arguments can be found for postponing an unpleasant reform. The conclusion of the *Economist* is that, in fact, the financial position of the Russian government is so weak that it can make no effort towards throwing off its inconvertible paper. But, if so, where is the inflation to end? "Is every expansion of trade to be the occasion and the cause of further issues of notes?" That was the contention here.

ANOTHER addition to the list of economic periodicals is made by the *Archiv für Soziale Gesetzgebung und Statistik*, which appears under the editorship of Dr. Heinrich Braun, of Munich. Its scope is sufficiently indicated by the title; and, while it specializes within the field of economics, its subject is so wide and so full of important topics that there need be no lack of variety in its contents. The first number contains an introduction by the editor and papers by J. M. Bärnreither on "English Statistics as to Persons out of Work," by O. Pringsheim on the "Condition of the Working Classes of Holland," by A. Oldenburg on "Infant Mortality," and by F. Erismann on the "Physical Condition of the Working Classes of Central Russia." There is a department on legislation and another for notes and miscellanies, as well as the usual reviews. Contributions are promised from a number of writers, among whom we note some familiar names, with others which indicate that the *Archiv* will have, to a certain extent, a connection of its own. We may expect from it contributions of high value for the advancement of social science and for the improvement of legislation. There will be four numbers yearly, at a subscription of twelve marks. The publisher is H. Laupp, of Tübingen, to whom subscriptions should be sent.

Still another new publication is the *Zeitschrift für Agrar-*

politik, which is edited by K. Frankenstein, and covers a topic of much present interest in Germany. It is to be published in twelve numbers yearly, at a subscription of 7.20 marks, by the firm of Böhme, in Leipzig.

THE condition of factory labor in India has begun to attract attention; and the need of more factory legislation is shown by the report of the Bombay Factory Commission of 1886, which has been published recently in a parliamentary blue book. This Commission recommends that women be not allowed to work in the factories more than eleven hours, between six o'clock A.M. and six P.M.; that children under nine be not allowed to work at all; and that children between nine and fourteen be not allowed to work more than nine hours, between 7 A.M. and 5 P.M. The present legislation in India goes no farther than to restrict the work of children between seven and twelve to nine hours, and does not fix the time within which these nine hours must be taken.

The Commission recommends also certain sanitary provisions, of which there are now none: the giving of four holidays per month (it seems there are now but fifteen holidays throughout the year in Indian factories); regulations for insuring the publicity of the law and the rules under it; and the repeal of the present exemption from restriction of factories employing less than one hundred hands. It was in establishments of the last-mentioned kind that the most lamentable state of things was found to exist. In small ginning mills, the hours of work for months were from 5 A.M. to 10 P.M.; and at busy times work went on uninterruptedly, day and night, for a week. Yet even here legislative interference must be slow and tentative, lest the women employed be deprived of their employment or compelled to accept a reduction of their meagre wages. The Commission recommends, in regard to these cases, a restriction to sixteen hours, with two hours of rest, for factories working less than six months in the year. It does not appear that any legislation has yet followed these various recommendations.

NOTE ON THE BANK OF AMSTERDAM.

In the account of the Bank of Amsterdam, for which Adam Smith says that he is obliged to Mr. Henry Hope, there is a statement of the practice of the bank in receiving deposits of bullion, which has sometimes been found to present some difficulties. Smith (*Wealth of Nations*, Book IV. chap. iii.) says that, to facilitate the trade in bullion, the bank had adopted the plan of giving credit upon deposits of gold and silver, at the same time giving a receipt to the depositor, entitling him to take out the bullion at any time within six months, upon retransferring a sum of bank money equal to that for which he had received credit and surrendering the receipt. The person who made a deposit obtained both a bank credit and a receipt, and could not withdraw his bullion without returning both : —

The holder of a receipt cannot draw out the bullion for which it is granted without reassigning to the bank a sum of bank money equal to the price at which the bullion had been received. If he has no bank money of his own, he must purchase it of those who have it. The owner of bank money cannot draw out bullion without producing to the bank receipts for the quantity which he wants. If he has none of his own, he must buy them of those who have them.

McCulloch, in a note (p. 215 of his edition of Smith), finds this arrangement somewhat mysterious, and concludes that it was a contrivance to prevent any depositor from drawing bullion until somebody else had deposited an equal amount, and that its object was to screen the really insolvent condition of the bank. McLeod, in his *Dictionary of Political Economy*, p. 219, is unable to make anything of the arrangement, and says : —

Surely there is some extraordinary error here. How can a man, upon a deposit of £100, receive *both* a transferable receipt and also a bank credit for an equal amount? That is as much as to say that for every deposit a man received credit to *twice* the amount. This part of Adam Smith's account of the bank's transactions seems to me to be wholly unintelligible.

Neither of these authors seems to have understood that the transaction described by Adam Smith was simply an advance of money upon a pledge of bullion. The bank advanced

only upon assayed bullion or, later, upon coin, and to the extent of perhaps ninety-five per cent. of the assayed value. It gave the depositor or borrower, therefore, credit in bank for ninety-five per cent. and also a receipt, upon the surrender of which and the repayment of the advance and interest he could receive his bullion again. It was the ordinary case of a loan upon collateral, with a margin of value above the loan, where the right to redeem the collateral is a valuable right. It was necessary to repay the loan and *also* to return the pawn-ticket before the article pawned could be redeemed. Indeed, it is not easy to see how the business of advancing upon bullion could have been managed without some such arrangement for certifying the right to withdraw bullion, in addition to the mere repayment of the advance.

Adam Smith remarks that "the receipt and the bank credit seldom keep long together." The merchant who believed that his bullion would rise in the market might very well obtain an advance upon it for the greater part of its value, and then hold his receipt for the rise. His profit, when the rise came, he would secure either by redeeming his bullion and selling it or by selling the receipt itself. The form of the receipt is given by Mees, *Proeve eener Geschiedenis van het Bankwezen in Nederland*, p. 185, as follows:—

Anno ———, the ———.

N. N. has brought into bank 1,000 ducats at 60 stuyvers the piece, with the condition that he shall be held to withdraw the same within the space of six months, paying to the bank $\frac{1}{4}$ per cent., or that otherwise, after the expiration of the aforesaid time, they shall be understood to be forfeited to the bank at the price aforesaid.

3,000 f.

M. M.

The operation is also explained by Sir James Stewart and by Oudermeulen in his *Récherches sur le Commerce*, II. i. 59 and 235, where the regulations for the assay of ingots and for advances upon them are given.

That the Bank of Amsterdam, at the time spoken of by Smith, had parted with a large amount of specie, and so had a guilty secret to conceal, there is no doubt; but the arrangements commented on by McCulloch and McLeod appear to have no relation to that fact, but, on the contrary, to be a natural mode of carrying on a legitimate branch of business.

D.

CORRESPONDENCE.

BUSINESS PROFITS AND WAGES.

Mr. Macvane prefaces his note on the above subject in the last number of this *Journal* by the statement that his aims in writing are to make his own position clear and to abstain from controversy. I do not think he attains the former of these two aims. He certainly does not attain the latter; for he proceeds to give a paraphrase of my views on this subject, and to find fault with them. I do not wish to trespass on the patience of the readers of this *Journal* further than to say that I abide by my doctrines as expounded by myself, but that I do not accept the paraphrase of them given by Mr. Macvane.

ALFRED MARSHALL.

THE DISTRIBUTION OF PRODUCTS.

I should have preferred to have the controversy between Mr. Atkinson and myself carried on in the pages of this review, as its circle of readers, though narrower than that of the *Forum*, is undoubtedly more competent to pass upon economic questions. But, as Mr. Atkinson has seen fit to "change the venue" and as the editor of the *Forum* has kindly opened its pages to me, I will follow Mr. Atkinson into the arena he has preferred, and reply to him at length on the termination of the series of articles he is now contributing to that periodical. When the time comes, I shall have no difficulty in showing: first, that Mr. Atkinson, despite his denial, did use the term "profits" as I understood it as well as in the sense he now claims; second, that the use of the word as a synonyme for "annual national savings" is illegitimate; and, third, if we allow Mr. Atkinson this illegitimate use of the term "profits," his position is far more untenable than as I understood him, as the theoretical basis of the calculation in dispute between us disappears entirely.

FREDERICK B. HAWLEY.

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[Chiefly published or announced since July, 1898.]

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B

THE
QUARTERLY JOURNAL
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JANUARY, 1889

TRUSTS ACCORDING TO OFFICIAL INVESTIGATIONS.

ON January 25, 1888, the House of Representatives of the Fiftieth Congress passed a resolution directing its Committee on Manufactures to inquire touching the names, number, and extent of the combinations known as associations, trusts, pools, and by other like titles, alleged to exist in this country for the purpose of controlling or curtailing the production or supply of various products. The committee was to search into their methods of combination and of doing business, their effect upon the prices of the necessities of life or other commodities of the country, upon its commerce, whether internal or foreign, and upon its revenue from import duties, also into all related matters which might call for or suggest legislation by Congress, and to report with recommendations, if any it should have to offer. Authority was given the committee to sit during sessions of the House, to compel the presence of persons and papers, and to swear and examine witnesses.

The investigation began on March 8, and was continued at frequent intervals through the summer. Since the Congress convened in its second session, the committee has not yet met. Its work, so far as it went, consisted in examining the Sugar, Standard Oil, Whiskey, and Cotton Bagging combinations. The report upon these is printed, and the principal matters disclosed by it will be set forth in this article.

On February 16, 1888, the Senate of the State of New York, by resolution, ordered its Committee on General Laws to investigate "into all matters relating to the formation of certain combinations and agreements commonly known as 'trusts,' and the effect of the same upon the public interests, and the persons, corporations, and individuals composing them." This committee sat at the County Court House in New York City every week-day but one from the 20th to the 29th of February. The time which the Senate allowed for the inquiry ended March 1. Although it was much too brief for the purpose, many facts of great interest were elicited. The report of this committee, too, has been printed, and will be our authority upon the matters which it, but not the Congressional committee, considered.

On February 29, 1888, the Canadian House of Commons raised a special committee "to examine into and report upon the nature, extent, and effect of certain combinations said to exist with reference to the purchase and sale, or manufacture and sale, in Canada of any foreign or Canadian products. This committee began its inquiries on March 6, and continued them till May 8. Twenty-six sessions were held, and sixty-three witnesses examined. The enterprises here called to account were mostly small, but compact, efficient, and confident. Some of them displayed peculiar features of organization and administration. The report to the House of Commons, an octavo of seven hundred and fifty pages, conveniently arranged and

indexed, and every way better presented than either of the above, is before us. We shall find it to be of no small value. The closeness to one another in time of these three acts ordaining trust commissions is significant.

A number of litigations involving the nature and doings of trusts, monopolies, and the like, have recently come to judgment in the courts; and the findings upon them are now of record. Our account will be based mainly on these four sources, drawing from others only in reference to points upon which, in order to a connected view, somewhat fuller information is required.

The most diverse species of joint undertakings are popularly stigmatized as "trusts," chief among which are the following: I. Amorphous enterprises involving plurality of interest, like the New York City Milk Exchange and the Empire Storage Company of Brooklyn. II. Cases where one corporation or firm, in virtue of its peculiar power or success, is tacitly accepted by others as the standard for price-lists and methods. III. Pooling arrangements of all sorts, such as have for many years been familiar to the public. Sometimes profits are not only distributed, but earned pool-wise, several establishments being administered by a joint committee of delegates from the several boards of directors. The Independent Cottonseed Association, lately declared by the Tennessee Supreme Court to be illegal as an attempted partnership of corporations,* was an affair of this sort. IV. Agreements as to prices or production lived up to with more or less fidelity. They may be very loose and general, or more solemn, based on written covenants and sanctioned by penalties. V. Contracts, with or without such sanctions, to grant special favors or rates in return for exclusive patronage. VI. Corners, provided they are the result of conspiracy and maintained for a considerable time. This specification covers instances in which a single cor-

*See *Mallory et al. v. Hananer Oil Works*, 8 *South-western Reporter*, 396 seqq.

poration or firm contracts at a fixed price for the product of all the rest in the business, thus so controlling the market as to sell at an advance. Profits may also be distributed as a particular means of maintaining the combination intact. VII. Trusts, possibly so called, in which a firm or a small corporation, one or more, sells out to a larger, retaining a mortgage or a lease on its old property, and perhaps receiving in further payment shares of the purchaser's stock. Analogous to this are those instances in which the smaller corporation merely makes over to the larger a controlling portion of its stock. VIII. Trusts, properly so called, of which the Standard Oil and Sugar Trusts are models. In a trust of this firmest order, stockholders in several corporations surrender their stock to trustees, receiving in return trust-certificates issued by those trustees, the latter then becoming, in lieu of the stockholders that were, the ultimate managers of the constituent corporations.

Organizations essentially the same as some of the above have existed for centuries, being, in fact, among the oldest institutions of which history speaks. Not to go back further, the mediæval guilds may be mentioned as such. In several English towns, the *gilda mercatoria* was exactly what would to-day be spoken of as a trust. Nor were guilds the only monopolistic creations known to other centuries. Karl Braun, in volume xcvi. of the *Vierteljahrschrift für Volkswirtschaft*, tells of a gigantic pepper trust which Elector Augustus of Saxony entered into about 1560 with the then king of Portugal and a certain wealthy Augsburg merchant by the name of Roth. They proposed to secure and permanently maintain a European monopoly of pepper by buying all that arrived at Lisbon and taking it to Leipzig as a centre of distribution. The scheme broke down, it being found that more pepper grew in the world than they had supposed, and that a great

deal made its way into Europe through other ports than Lisbon.*

Even in American communities, *quasi-trusts* are by no means a new thing. Our trades-unions are nothing else but trusts over the commodity of labor. The Oil Well-drillers' Union of Western Pennsylvania, a trade-union, as comprising workmen mostly, has in it *entrepreneurs* as well, and so approaches the veritable trust. Silent agreements as to prices have always prevailed among contiguous dealers in a given sort of goods. With wholesalers, the custom is old and not rare of fixing the minimum prices at which retailers shall vend their wares. The physicians of nearly every locality have a prescribed fee-list. So do lawyers. The writer has seen in a New England court-house a detailed schedule of prices for attorneys' services, which must have been printed not less than fifty years ago.

But it is quite true that the associational system of business is in its present magnitude a thing of recent origin. It took its life from the marked and immediate success of the Standard Oil Trust, created in 1882. The career of this Titan agency has stimulated on all hands the most earnest efforts to imitate or rival it. There is scarcely a single industry in the country which has not, either bodily or in some of its phases or departments, passed under this or that form of associate management. Reports of fresh schemes for business amalgamation literally crowd the press. Joining hands, massing energies,—

*They heaped up in the Saxony city enough to make themselves poor, but not enough to corner the European market. The king died before the bubble broke, perhaps in fear of such a disaster. The merchant committed suicide. The elector sold out his pyramid of pepper-bales, regardless of cost, with the determination to traffic in that commodity no more. In the same volume, Braun also gives an interesting account of an attempt made in the years 1824 to 1829 by the great house of Cropper, Benson & Co. in London to monopolize the cotton trade of England, under the impression, which somehow had great prevalence just then, that the negro race in America was dying out, and that without its agency cotton could not be raised. This project, too, failed most disastrously.

that is emphatically the order of the day in economic affairs.

True, not a few plans in this direction have come to nothing. Early in 1887, the manufacturers of rubber goods made an effort to combine on a gigantic scale, but without effect. They renewed it in January, 1888, with the purpose of launching a trust precisely after the Standard Oil pattern, stock to be surrendered in exchange for trust-certificates; but this time, also, the different parties failed to agree, and the scheme was abandoned. The Kentucky Whiskey-distillers' Agreement for 1887-1888, to limit production, has not, we believe, been continued, earnest as were the efforts for that result. Other like endeavors have achieved a measure of cohesion, but not the slightest ability to harm. The so-called Nail Trust is one of these. Far from oppressing, it has hardly succeeded in keeping prices at a paying level. A hot feud is said to be rending the Glucose Trust. The Lead "combine" is little but a name. A smelter in New Mexico and a refiner and a manufacturer in St. Louis pooled their interests, but, handling barely 3 per cent. of the metal's annual output, found themselves powerless to dictate its movement. Besides all such cases, one could name other combinations, vicious in purpose and effect, which, nevertheless, we need not dread, because, though perhaps not punishable, they are clearly illegal, and based on contracts which the courts have uniformly refused to enforce. Discord must blast them in a little time.

It is every wise extremely confusing to class all the above-named enterprises as trusts. They have in common only the single feature of excluding more or less perfectly old-fashioned individualism of management. Let us separate them.

First, a specimen or two of the amorphous variety. The New York committee men denounced as one of the worst monopolies which they examined the Milk Ex-

change (limited) of New York City. Its business is to gather milk from dairymen in all the country around New York, and pass it to city dealers, collecting from the latter and making payment to the former. It was found that, while it gave only from two to three and a half cents per quart to the producers, the price to families in the city was sometimes as high as ten and rarely under seven. Though handling perhaps not over an eighth of the milk consumed in New York daily, the Exchange people, in the language of one of their number, "fixed the prices so carefully" that other dealers, for the most part, adopted these, the Exchange's terms being in a way law for the entire city. Evidence was offered to the effect that the low rates to farmers for their milk had induced the use of poor feed, thus impoverishing the liquid with no diminution of price to the consumers. In 1882 or 1883, the Orange County dairymen made a long and spirited attempt to get into direct communication with the consumers, circumventing the Exchange; but they found it too powerful, and after about a year desisted from their attack.

The Empire Storage Company, limited, of Brooklyn was discovered to control nearly the whole of that city's general warehouse facilities, along with about 45 per cent. of its elevators. The gains of this monopoly came from leasing and subleasing storage-room. Witnesses admitted that prices to storers had risen since the company was incorporated,—for some articles not less than 50 per cent. One said, hereafter "there won't be much competition, it is not likely. It is hoped not. We want to destroy it all we can. Competition is a bad thing."

Classes II. and III. in our list hardly need exemplification. In illustration of Class IV., the New York investigators called to account the Standard Envelope Company of Springfield, Massachusetts, a corporation with a capital of \$5,100, comprising * a number of Massachusetts, Con-

* Though not acquiring their property, herein differing from the J. M. Atherton (Whiskey-distilling) Company of Kentucky, sometimes alluded to as the (or a) Whiskey Trust. This we refer to Class VII.

necticut, and New York envelope firms. The organization was started, it was avowed, to harmonize interests, and in particular to fix the prices on what are known as commercial envelopes, the firms of the Standard Company turning out from one hundred and twenty to one hundred and forty millions of these monthly,—nearly one-half of the country's total product. On each thousand of these envelopes sold by any of the concerns, that concern was, at the time of investigation, obliged to pay twenty cents into a common fund, intended partly for contingencies, partly for profits. This tax would, in a normal month, amount to from \$24,000 to \$28,000. Profits were distributed according to stock held, not according to production.

"Combines" falling under V. in our classification are very numerous,—much more so, we believe, than is commonly supposed,—and constitute a well-defined type. A California corporation stipulated with certain dealers to supply them with lumber during the year at so much a thousand, the purchasers to sell meanwhile in Monterey, San Benito, Santa Cruz, and Santa Clara Counties no lumber bought from other parties. The buyers being false to their agreement, the corporation sued for damages. The court below and the court above both decided the contract void, as being a scheme to raise prices by rigging the markets, and thus contrary to public policy. The New York Court of Appeals recently had to declare a contract void because it involved limitation to the output from a certain colliery at Pittston, Pennsylvania, in order to manipulate the coal supply in Elmira, New York. For a consideration of half a cent per pound special rebate in addition to the regular jobbing discount, many retail grocers are at present making promises to sell only the wares of given wholesalers, except when customers imperatively order specific articles to be had only of other dealers.

The Wholesale Grocers' Guild of Ontario and Quebec has reduced this sort of finance to a system. Beginning as an association to arrange uniform terms of credit and discount, it has become a veritable tyrant. It imposes and collects money penalties, and excludes from its membership with much evident sense of eminent domain. It coerces the Dominion sugar refiners to sell it sugar at thirty cents a hundred less than to outsiders. It even essayed once to forbid these purchasing at all. The Guild has agreements with manufacturers of tobacco, starch, and many other staple goods, enabling it rigidly to fix retail prices. Any wholesaler standing aloof from this ring is pretty certain to be crushed.

The Coal Section of the Toronto Board of Trade is another "combine" of the same order, which seems to be the favorite one in Canada. It is a monopoly, with fifty-six participants. Most are retailers, though the half-dozen coal importers in the number hold the reins and reap the profits. The most arbitrary rules are enacted, detectives employed for surveillance over members and salesmen, oaths required of both, sometimes retroactive as well as prospective, heavy fines or expulsion being the penalties for breach. A fine of \$1,000 had been imposed in three several instances. One of the victims was an American firm,—for the organization reaches hither. The Butler Colliery Company of Buffalo sold a schooner-load of coal to Messrs. Gooderham & Worts, of Toronto, without the trust's consent. What followed let us recite from the trust's own minutes :—

Resolved, That the matter of the shipments by the Butler Company be left in the hands of the Toronto committee in Buffalo to be dealt with as the importance of the case demands. *Resolved*, That, as the Butler Company have indicated their willingness to make reparation for the damage done this market through the shipment of coal to Gooderham & Worts contrary to the rules of this association, this committee are of the opinion that several thousand dollars would not be sufficient to undo the mischief, as the coal has been distributed

among a large circle of friends, who freely informed their friends that they had succeeded in beating the coal ring, and have got their coal at a large reduction from ring prices. However, in view of the prompt offer of the Company, the Coal Branch of the Toronto Board of Trade are to be as reasonable as possible in their demands, and will accept \$1,000 as full satisfaction in this instance.

The Dominion commissioners further say : —

When tenders are asked for supplying coal in Toronto for government buildings, Ontario government institutions, Toronto water-works, public schools, charitable institutions, the general hospital, etc., a meeting of the Coal Branch is called, and the price is fixed which the party inviting tenders is to pay ; and the privilege of filling the contract is awarded to the member who offers the highest premium, or bonus. For instance, in 1886, for the privilege of filling the Ontario Government contract of about 2,500 tons, a premium of \$1,500 was paid. The same contract, including some wood, was sold in 1887 for \$1,399. The premiums thus paid are divided among the importing members in the same way as the fines. But, in order to lull public suspicion of a combination, and that the parties to be supplied were not obtaining the coal at its fair market value, other members of the Branch put in tenders at higher prices.

The Coffin-makers' and Undertakers' Trust, that in Cordage and Binding Twine, the Iron-founders' Association, the Oatmeal Millers' Association, the Biscuit Association, the Confectionery Association, the Fire Insurance Ring, and the Egg Combination, all brought to book by this Canadian inquest, were found to be constituted much like the concerns just described.

The famous Copper Syndicate is a combination of the Vith, or protracted corner, class. The core of this, as is well known, is the Société Industrielle et Commerciale des Métaux de Paris, which hopes, through the bargains it has made with all the principal producers everywhere, to command the copper product of the world. In a specimen contract existing between it as buyer and a great American company as seller, it is covenanted as follows :

Seller sells to buyer his entire output from May 1, 1888,

to December 31, 1890, at thirteen cents a pound, and, in addition, a sum equal to one-half the net profits over this price realized on the copper when resold by the Société. The seller, when required, must act as buyer's agent in America for seller's own output. Cash is to be paid for the copper on delivery in New York. For failure to deliver occasioned by strikes, accidents, or lessened productivity at the mines, lack of transportation, or other cause beyond his control, seller is not to be held responsible. To insure payment, the buyer has to keep in New York, subject to the seller's draft, satisfactory credits considerably in advance of deliveries. To the extent of the selling price, thirteen cents a pound, but no further, the seller guarantees all sales made by him in America. Differences arising between the contracting parties are to be settled by arbitration.

It is understood that since the date of the above contract the Syndicate has been reorganized, with larger capital, and more surely within the French law against monopolies. It is further believed that it has drawn into its circle a number of new mining companies in sundry parts of the world, and induced those, including the American, which were its customers before, to renew their contracts, for periods ranging from eleven to fifteen years.

The Cotton Bagging monopoly is in principle just like the Copper Syndicate, though a trifle more complex,—a wheel within a wheel. The original parties to it, buyers and sellers, the more completely to dominate the trade, became partners in a new set of contracts, with numerous other establishments not in the original arrangement, to purchase of the latter their entire production. The plan triumphed ideally, resulting in what is probably the most close and cohesive association of the kind yet seen, aside from the genuine trusts.

For combinations of our VIIth class, "trusts possibly so called," we need only advert to the innumerable cases

where great railways have secured decisive interests in smaller ones, consolidating these with themselves into general systems. Less complete is the fusion secured by the J. M. Atherton Company of Kentucky. Having, to obtain control of their business, bought the plants of five distilling corporations, it leases these plants back, each to its former owner, who carries on the industry to all appearance just as before.

We come lastly to trusts proper, of which the most conspicuous examples now before the country are the Sugar Refineries Company, the American Cotton Oil Trust, the Distillers and Cattle-feeders Trust, and the Standard Oil Trust, to create each of which stock of old corporations was lodged in the hands of trustees, who in place of it distributed their own certificates.

The Sugar Refineries Company, known as the Sugar Trust, originated in a deed of agreement dated August 6, 1887, though the organization was not in complete working order till November 1. The agreement was made by and between eight sugar-refining establishments, nearly all located in New York and Brooklyn, and representing 85 per cent. of the refining capacity this side of the Rocky Mountains. Its objects, as alleged, are: —

First, to promote economy of administration and to reduce the costs of refining, thus enabling the price of sugar to be kept as low as consistent with reasonable profit; second, to give each refinery the benefit of all appliances and processes known or used by the others, and useful to improve the quality and diminish the cost of refined sugar; third, to furnish protection against unlawful combinations of labor; fourth, to protect against inducements to lower the standard of refined sugars; . . . and, fifth, generally, to promote the interests of the parties in all lawful and suitable ways.

Annual meetings are to be held in New York City every June. Certificate-holders may vote by proxy if they wish. No one of the eleven trustees, who possess all the stock, can, while in office, buy or sell sugar or be interested

directly or indirectly in its purchase or sale. The trustees may transfer, from time to time, to such persons as they desire to constitute officers of corporations, the number of shares of stock necessary for this purpose. The trust-certificates are in \$100 pieces and the issue is limited to \$50,000,000, of which only about \$42,500,000 were outstanding at the time of the Congressional inquiry. The entire property of all the sugar refineries had presumably been represented by stock; but each, negotiating separately, exchanged its total stock for certificates on such terms as it could make. That is, not every hundred dollars in stock commanded such and such an amount in certificates, whatever the refinery to which it had belonged. Some companies might get more, others less. Among the stockholders of any given concern, however, exact pro-rating was observed, so much in certificates in return for so much stock.

The American Cotton Oil Trust had not, to the time when the record was printed, been before the Congressional committee; but the New York committee produced evidence revealing its character sufficiently for our purposes. This trust dates from 1884. It was organized precisely like the Sugar Trust. The constituents were corporations, seventy-two or seventy-three in number, with mills and refineries in various States, mostly at the South, though the Trust's general office is in New York City. Stockholders passed in their stock and received trust-certificates therefor. Of these, 417,000 were issued, par value \$100. The industry to which this trust is devoted is a novel one, manufacturing and refining the oil of cotton-seed. At present its dimensions are truly vast. During 1887 the establishments in the trust crushed about 530,000 tons of seed. All parties together crushed over 700,000. The value of the trust-corporations' product from May, 1886, to May, 1887, was placed at \$24,000,000. About 27½ per cent. of the oil the past year was exported.

The Distillers and Cattle-feeders Trust,* commonly mentioned as the Whiskey Trust, was formed May 10, 1887. It is constituted in all respects like the two preceding. Eighty-one distilling companies are in it, three belonging to Kentucky, the rest to New York, Ohio, Indiana, Illinois, Wisconsin, Missouri, and Nebraska. Peoria is its official and also its business centre, two-thirds of the distilleries being located there. The concerns in this trust manufacture 85 per cent. of all the alcohol and spirits produced in the country, and about 53 per cent. of all the liquors of every kind; *i.e.*, 40,000,000 gallons a year out of 75,000,000. Only about 15 per cent. of their output is whiskey. The certificate-capital is \$30,000,000, in shares of \$100.

But the Standard Oil Trust is the most renowned as well as the most solid and successful of the quartette. It was organized by an agreement dated January 2, 1882, though its head men began to see eye to eye ten years earlier. Its chief office is in New York City, where the nine trustees hold regular meetings once a quarter. The corporations, partnerships, and individuals who compose it—it does not, like the others, consist of corporations alone—represent many different States. Ninety million dollars of face value in its capital-certificates are outstanding, in about 700 hands; the trustees, however, holding and owning a majority in value. The certificate-capital may be increased at any time. The trustees' yearly salary is \$25,000 apiece; the president's, \$30,000. The business over which this trust presides is primarily oil refining; but its pipe-line transportation has become an enormous ancillary industry. The allied establishments employ 25,000 men and refine not far from 75 per cent. of all the petroleum refined in the country.

* This is the real Whiskey Trust. The title has, however, been applied also to (a) the J. M. Atherton Company, mentioned above, (b) the Kentucky Whiskey-distillers' Agreement of June 9, 1887, (c) the alleged moonshiners' "combine" of North Carolina, and (d) the National Protective Association, for agitating against prohibitory legislation.

The trust as embodied in each of these four Herculean forms is a device to unify and vitalize corporations for concurrent action, by partly or wholly separating in each the voting power from the beneficial ownership, concentrating the former for all of the constituent bodies in one and the same bevy of men; namely, the trustees. The strictly legal title to the stock passes to the trustees, acting as if joint tenants, carrying with it, of course, the right to vote.

The looser methods of concert between bodies corporate, taking one another's stock, leasing one another's plants, making contracts between their boards of direction, had involved many sources of weakness. It was not difficult, in States where no law forbade, for one corporation to get in hand a value-majority of another's stock, — the one-half plus one share necessary to elect directors and secure the decisive voice. But directors' authority is limited. They cannot alienate the corporate power, or make contracts which shall bind the corporation to exercise this in disaccord with the stockholders' property-rights. Here is the reason why so many a pooling or other engagement between corporations has proved a rope of sand.

Now the trust proceeds upon the theory that a corporation is a wholly different entity from the corporators who form it. What these do with their stock touches the corporation no more than where they attend church. If they please to lodge it with trustees, no taint attaches to the corporate character. A trust may exist, therefore, and the voting power of all the constituent corporations entirely pass into its hands, without the slightest peculiar or doubtful corporate action by any one of these. Each of the associate legal persons is left perfectly free and independent. No charge of *ultra vires* is maintainable. If such is brought, the reply is ready that only the board of directors can voice the corporation's will, and that no one of these boards has had aught to do with the erection

of the trust. The grand council at the centre can thus vote the stock of all the corporations, and elect, as directors and managers of each, men who will carry out its behests, proceeding without a scrap of corporate agreement, with no legal covenant, with no compact at all of which there is record.

The stockholders, meantime, of course cannot but be agreeable, since the trust-certificates given them for their stock are certain, through the extra efficiency of the centralized control, if for no other reason, to render the change richly lucrative to them. It is, to be sure, not indispensable that all the owners of stock in a corporation should give it up for trust-certificates. It will suffice if a majority be lodged with the central board, although unanimity would doubtless lend strength to the union. For purposes other than voting, the trustees are in appearance mere trustees. They do not officially or visibly represent the corporations,—have, indeed, no necessary contact or communication with them. Yet their power to vote on election day, seating and ousting directors as they list, is enough to establish absolute sway in their hands.

In both the investigations before us, witnesses testified that the corporations in the trusts each maintained its separate organization and carried on its own business. The Standard Oil Trust agreement explicitly insists that all property, real and personal, all assets and all business connected with the trust, must be vested in the several companies, trustees' duties being restricted to the receipt of dividends declared by the corporations, the distribution of them to trust-certificate holders *pro rata*, and the custody and the use at elections of the stock in their charge. Both Sugar Refineries trustees and Standard Oil trustees denied on oath that they as trustees ever did any other business than to receive and distribute dividends and hold and vote the stock of the various corporations which had joined their trusts.

Counsel for the Sugar Trust, being reminded that its deed of agreement ran in the names of its several corporations, insisted that the surrender of stock and the receipt of certificates were none the less purely the acts of individuals, and not in any way whatever of the corporations as such; and that the acts of the board were in like manner individual, "Sugar Refineries Company" being merely a convenient name. Witnesses alleged that each board of directors continued to control its own affairs so fully that it might close its works and still share dividends, and that trustees never assumed to dominate or restrict any corporation's business. H. O. Havemeyer, being sworn, declared the statement that the trustees had anything to do with the management of the sugar-refining business absolutely false; and likewise false the notion that they directed in any way, shape, or manner any one of the corporations whose stock was deposited with them. "There is," he said, "a specific provision in the deed that nothing of the kind should occur, and it has been rigidly observed."

But we must certainly take all this in the light of admissions, also in evidence, that the trustees meet often in more or less formal sessions, that they fall in with each other frequently in their business, that each has knowledge of the others' views continually, and that the full voting power at every stockholders' meeting of all the various corporations is in the hands of this board. So, when it is said in the testimony that not the board, but only the corporations, declare dividends, we must remember that the board hold and vote all the stock, and that all the managing authorities of the corporations are their creatures. Whatever the theory, whatever its status in law, the trust is, in actual fact, a solid, organic, efficiently centralized structure. All the purposes put forward to explain its mission presuppose this. Assertions of its loose and irresponsible nature will beguile

no one who reads the evidence. Further, while such speech may strengthen the trusts' case legally, it weakens it economically and ethically. One would give much to be assured that trusts as trusts cheapen cost. Certainly they might: we believe they do. "No," virtually says the testimony: "they as trusts have no relation whatever to production." Why, then, do they exist? Simply to rig prices? We will not yet judge them out of their own mouth.

The Congressional committee ask special attention to the adroit form of combination just described. It was, they say, "obviously devised for the purpose of relieving trusts and trustees from the charge of any breach of the conspiracy laws of the various States, or of being a combination to regulate or control the price or production of any commodity." Hence, as they further observe, the persistent asseverations of the trusts' witnesses that it is the corporations themselves which own the tangible property and regulate the prices of commodities and the extent of production, just as before the trusts were born; that these corporations remain with their organization intact and distinct, and not in combination with each other; that the *stockholders*, who owned only the *stock*, but by well-settled law had no legal title in the *property* of the corporations,—these entered into the agreements, sold their stock, and accepted trust-certificates in payment; and that the trustees receive and hold only that stock, have no legal title to any of the property of the corporations, and neither buy nor sell anything nor combine with any one to fix prices or regulate production. The committee are of the opinion that all trade syndicates, with aims similar to those of the trusts scrutinized by them, have either adopted this skilful plan of organization or will soon do so, thus evading all trust legislation hitherto proposed in Congress, directed as it has been against schemes "to fix prices or regulate production."

The question whether or not trusts are legal is still *sub judice*.

The principles thus far affirmed by the courts (and with singular harmony) are: 1. A stockholder cannot irrevocably divest himself of the power to vote on his stock, and his agreement to that end does not bind him. The law will not hold him in damages for a breach of it, and equity will enforce his revocation of it. 2. A combination of stockholders to commit their powers of voting to a single hand is not illegal *per se*, but amounts to the giving of so many proxies. 3. Stockholders not in the combination cannot have relief against it unless its object be illegal. 4. If the object be illegal, as, *e.g.*, to confer the power to dictate the vote upon another corporation which could not directly hold stock and cast the vote, the contract is illegal, and any stockholder may enjoin the execution of it.*

The trust being so profitable is, as we have seen, about sure to take in and satisfy all the stockholders, so that it would have nothing to fear from them, even were the purpose of their stock-transfer pronounced illegal. The institution is vulnerable, if at all, only from the side of the State. Two avenues of attack upon it are open, and have already been utilized: the charges, namely, (1) that it usurps the functions of a corporation without being one, and (2) that it contravenes public policy as obstructing trade and enhancing prices.

On the strength of (1), the Louisiana court has recently condemned the Cotton Oil Trust;† but this view

* 19 *Abbott's New Cases*, 448 *seqq.*; *note* on Stock Trusts for the Control of Corporations. We are indebted to this learned discussion for many legal points. On some, the writer's able colleague, Professor C. A. Collin, of the Cornell University School of Law, has also kindly thrown light. In the *Political Science Quarterly* for December, 1888, Professor T. W. Dwight maintains not only the legality of trusts, but also the impossibility of touching them by legislation, State or national. He seems to us to assume the very point at issue; namely, the correctness of the *purpose* for which trusts are here. Will it do to take this for granted, with no canvass of their actual doings, simply from the innocent tenor of the Sugar Refineries deed? On the other side, see General Pryor's impressive argument in the case *New York vs. North River Sugar Refining Company*.

† 1 *Railway and Corporation Law Journal*, 509 *seq.*

of the law, it is believed,* will not be sustained in any of the other States. The case *People of the State of New York vs. Henry O. Havemeyer et al.* (Sugar Refineries Company), now pending in the Supreme Court of the State, is, however, also based upon this allegation (1). That against the North River Sugar Refining Company, on the other hand, now arguing before the same court,† turns upon (2). The issue of these litigations will be learned with interest; but, should it be adverse, and followed in other commonwealths, trusts would not yet be laid. The day of old-time competition has set. Law or no law, capitalists will henceforth march mostly in phalanxes.

Such in essential structure is the trust; but there are many other interesting questions concerning it on which our data give information. Before passing to them, however, it may be well to premise a remark.

Scores of business understandings and associations exist whose utility cannot be questioned. The aggregation of capital and the centralization of management are often incalculable benefits. It has been a strong count in the socialists' criticism of the old economic order that under it production is carried on in so wasteful a way; and thoughtful socialists have well shown at how many points, and how extensively at some of them, society might save, were production placed under wise and general supervision. Competition is by no means always a good. It is, indeed, never so for its own sake, but only as a means to keep lowest possible cost plus normal profit the law of price. But it may abnormally raise cost and prices both. Different manufacturers start their machinery in ignorance of each other's aims, and crowd the markets with a

* Mickey, in 22 *American Law Review*, 542.

† 4 *Railway and Corporation Law Journal*, 145, 241; 27 *Central Law Journal*, 205.

stock too heavy to be taken off. While the strife is on, prices are low; and, for this felicity, people bless competition. The failures which ensue, the stoppage of work, the decay of mills and machinery, and the rise of prices entailed by all this, often making the average cost of goods for the period far higher than was necessary,—these things few refer, as all should, to competition. The giant style of undertaking is, in part at least, a wholesome movement away from this evil. By it, the field of the industry in question can be mapped out, careful estimates made of the probable demand, and production adapted to this in both place and time, all with a thoroughness impossible so long as competition was unbridled.

In familiar instances, consolidation is confessed by all to have worked well. Who would have the telegraph system of the country or its great railway lines broken again into the pieces they once were? With mutually related activities which do not fuse, pooling, too, is under certain conditions indispensable. An instance is the extraction of crude oil. Some of the fields cover such geological formations that a deep well will drain all the others for a considerable distance. Competition among well-owners here would immensely enhance risks and cost. Arrangements for correlating establishments and regulating competition are not therefore *per se* to be condemned. The only questions that can justly arise in the premises are where and how beneficial co-operation can be introduced without involving fraud and baneful monopoly. These considerations ought to divest us of all prejudice, as, guided by our evidence, we proceed to some more specific queries.

Have the great trusts secured extraordinary gains? Undoubtedly, they have done well. The face value of the Sugar Refineries' total certificates was fixed at a sum far greater than that of the total stock which they replaced. The New York committee say four times as

great, and the way in which counsel fought shy of the point lends color to some such estimate. They, it is true, stood to it that the old stock capitalization had been too low, and that the properties, including good will, patents, and producing capacity, possessed value fully up to the aggregate of certificates. Light is thrown on this assertion by the fact that \$595,000 of face value in certificates were assigned to the North River Sugar Refinery, which had just before been purchased for \$325,000 in cash. So wide a margin of the new paper over the old certainly seems to imply a wish on the part of the managers to provide for an inordinate income without letting it be too visible. The certificates were apparently proportioned, not to the old getting power, but to the larger one which was in prospect. The certificates, at the time the testimony was offered, ranged in value, so the papers said, between \$65 and \$85 per share. Call it \$75. This would mean that the property had appreciated about 30 per cent. simply by coming under the trust. But there is reason to suppose that the proportion of certificates to stock was much larger in the cases of the other corporations than in that of the North River Company. This, at least, the company's managers believed. Putting various data together, we hazard the conjecture that the property which was placed in trust has been gladdening its owners with not less than 10 per cent. returns. It is not unreasonable to agree with gentlemen in the trust, that the rate might have been far higher but for "all this howl in the papers about trusts," as Mr. H. O. Havemeyer expressed it, and the consequent legislative investigations.

The Cotton Oil Trust, too, uttered certificates much in excess of the aggregate stock on which it was based; but how much neither coaxing nor threats could induce witnesses to state. One of them, being asked whether the stock amounted to a fifth of the certificates, answered, "I think a good deal more." Q. "Was it as much as one-

third?" A. "I could not say. I know it was more than one-fifth." Q. "Between those figures, was it not?" A. "It is a matter of a good deal of conjecture." Q. "Was it less than a third?" A. "I should think not less than a third." "Good will" evidently entered to a considerable extent into this capitalization also. The cotton oil certificates (par value \$100) have sold as high as \$65, as low as \$31. On December 10, 1888, they sold for \$54.25, and were rising. A quarterly dividend, the only one reported, was declared in August, 1887. It was 1 per cent. on the face value of the certificate, or 4 per cent. yearly. This, however, left money in the corporation treasuries. The original investment must have brought in late years not less than 12 per cent.

The Whiskey Trust's certificates — so Mr. J. B. Greenhut's testimony seems to mean — footed up two or two and a half times the amount which the plants would have sold at, yet paid regular dividends, after January 1, 1888, of one-half per cent. a month. This would obviously equal 12 or 15 per cent. on the original capital.

The Standard Oil Trust, like its fellows, emitted a greater face value in certificates than had been outstanding in stock. It is to be regretted that Mr. Rockefeller did not defy his counsel, and frankly tell the Congressional committee just how many certificates each party to the trust received and the relation in value of the certificates to the old stock. Was it his motive to keep corporations from knowing each how the others fared in the distribution? They will learn in spite of him. This is no "purely private matter," and the determination so to treat it cannot but work the suspicion that the Trust's winnings have been greater than it would be safe to disclose; but it was admitted that "the amount of certificates issued was in excess of the appraised value of the tangible property of the various corporations,—intangible property, such as good will, patents, trade-marks, etc., being included in the valuation."

The yield of this copious paper proved very generous, averaging in the first six years of the Trust's life $7\frac{1}{2}$ per cent. annually, in addition to about 4 per cent. of annual surplus. Part of this surplus went into the twenty million dollars' worth of new certificates, which were issued early in 1887, to raise the original seventy millions to ninety. Besides, it was thought possible that, after the estimates for 1887 were all in, there would be a still further amount,—equal to $1\frac{1}{2}$ per cent. during the Trust's whole history,—making the rate earned by the certificate-capital embarked in the adventure from its beginning till the end of 1887 somewhere about $12\frac{1}{2}$ or 13 per cent. The par of the certificates is \$100. At the time of the investigation, they were selling at \$165. They have been 20 per cent. higher than this, and never lower than \$80 or \$70. Suppose "water to have been mingled with the oil" to the extent of one-third of the initial certificate-capital, the old stock must have been bringing its possessors 18 or 20 per cent. yearly.

Were the gains in these cases *earned*? Of course, no just inference is to be drawn from their mere largeness. Even if the certificates embodied water, it does not necessarily follow that dividends were paid upon them at the expense of the public. It is conceivable that these were earned as truly as the wages of any laborer in the land. So tremendous are the advantages of massed capital and centralized control, that an establishment possessing them ought to produce at a cost so greatly below what isolated undertakings would incur as to sell more cheaply and get rich at the same time. Claus Spreckels put it well in his words to the Congressional committee, "I can conceive of a trust, if it is not too anxious to make money, being in fact a real benefit to the country in cheapening cost; but, if they are at all selfish, as men mostly are, I can conceive of the trust being made very injurious and detrimental to the interests of the country." "We have

found," so testified the president of the Standard Oil Trust, "that, with all the talent represented in the different departments of this business, we were making progress in all these. In the chemistry, in the making of barrels, in the making of tin cans, and in all the little economies of the business, we have steadily made progress; and, as that progress has been made, we are enabled to push the sale of products more and more, and yet have for ourselves a return. And that has been the history,— steady reduction of cost of all that goes to make up the aggregate cost of the oil, and improvement in the quality of the oils." Impressive testimony was also borne touching the successful efforts of the Standard Oil managers to enlarge their market abroad. Probably no business that ever existed in this or any other country has made such resolute, unrelenting, and triumphant mercantile campaigns in lands foreign to its seat as the Standard Oil Trust. The result is one clear proof of the advantage secured by carrying on business in this mammoth way. Isolated refineries would never have won a hundredth part of this foreign trade. And, whatever uneconomic measures the Standard may have been guilty of in extending its field at home, its victory abroad is mainly due to its commendable enterprise.

But it is clear that each of these trusts has a considerable power to fix its buying and its selling prices arbitrarily, and that all or nearly all have to some extent done this. They can compel sales to themselves at the narrowest living profit above cost of production, and can sell at prices higher than would have prevailed under free competition, allowing for such improvements in machinery and methods as might reasonably have been expected, had competition continued.

Advocates of the trusts evidently suppose that no abnormal prices are possible in an industry so long as any sort of competition prevails. Were the competition other

than formal, this would be true; but, in the case of these three trusts, it is formal only. The point deserves special attention. It is maintained that the Standard Oil Trust, for instance, must have been refining oil at a rate as low as could have been afforded under the most favorable competitive *régime*, because there remain active refineries not leagued with it. The argument is thought to be reinforced by the observation that the number of outside concerns has even increased, perhaps doubled, since the trust went into effect. The inference is unwarranted. It is not necessary, in order that a great business may put a monopoly price upon its goods, that it directly control the entire production. Immediate mastery of a decided majority is practically the mastery of all. So, in the case of steel beams, no new establishment or two will ever break present monopoly rates. To effect that, producing power would have to be doubled.

No one will question that the Copper Syndicate has enormously raised prices above what competition would have made them. Competitively, the metal would be selling for ten cents a pound instead of sixteen. Yet the Syndicate purchases only about three-fifths of the world's entire product. This enables it to dictate prices to consumers; and all the producers not in the Syndicate — like the Anaconda Company of Montana — secure the advantage. The Cotton Bagging agreement nearly doubled prices, though two mills at least stood aloof. The chief witness for this monopoly declared: "I think it gives us absolute control of the bagging market. If we said it should be twenty-five cents a yard to-morrow, it would be twenty-five cents a yard." He seemed to think the rise actually decreed to be a trifle, costing the average cotton-raiser no more than his tobacco bill for a month, and the entire South only the matter of \$4,000,000. The outside mills shared the plunder. Precisely the same occurs in the Oatmeal Millers' Association of Canada, — a ring for depressing the price of oats and raising that of meal. It

has closed ten mills, paying them from \$300 to \$800 each per annum, or a total of \$6,312, for inactivity. The Canadian Trust Committee find that the outside mills, numbering about twenty-five, are "of such limited capacity that their influence is not materially felt in the general market; but they avail themselves of whatever advantage the combination gives them to keep up prices."

The principle here is similar to that of rent. Price-fixing by the dearest cost of production is another analogue. We know that the rates to consumers for sugar have not been lowered by the entry of the Hawaiian crop into this country duty free, for the simple reason that not enough thus comes in to supply the market. So the silver dollar continues at gold par, because not sufficient silver dollars or certificates circulate to do the country's required money work. In substantially the same way, unless the small producers, who pretend to compete with the trusts, can so enlarge their capacity as to supply the market,—of course an impossibility,—it will remain, as heretofore, for the trust to say what prices shall be.

When a commodity is turned out under such conditions, cost no longer regulates the price. This is done quite arbitrarily for a time, the seller's whim being perhaps sobered a little by his memory of old competitive rates. Slowly caprice gives way to law; but it is a new law,—that of men's need. Prices go higher and higher till demand, and hence profit, begins to fall off; and they then play about the line of what the market will bear, just as they used to about that of cost. The producer can be more or less exacting, according to the nature of the product. If it is a luxury, the new law may not greatly elevate prices above the old notch. If it is a necessity, he may bleed people to death.

Whether or not any one of these combinations has exercised this power is another question, though equally soluble. Just as we might have expected, almost or quite all of them have done so. We have seen this to be

true of the Milk Exchange, of the Storage and Envelope Companies, and of the Copper and Bagging Syndicates. The Canadian "combines" as well, all but one or two, proceeded to raise prices as soon as formed. Our Sugar Refineries Company did the same. It made sugar considerably dearer, and that at precisely the season of year when the marketing of the Louisiana crop usually renders it extraordinarily cheap. Mr. W. P. Willett finds that the difference between standard raw sugar and standard refined increased from five-eighths of a cent a pound in January, 1888, when the trust got full control of the market, to one and three-sixteenths cents in January and to one and a quarter in February, a change costing the country a round million and over each month it was maintained.* The sugar men admitted an advance of half a cent a pound in their prices, but sought to excuse it by noticing that the London rise had been twice as great. Of course this signifies nothing, as the change abroad could not have affected cost of refining.

Concerning the Cotton Oil Trust the case is less clear. Since its organization in 1884, crude cotton oil has fallen somewhat, while in refined there has been little change. This means, if cost of production has been lessened as alleged, a decided relative rise. On the other hand, cotton seed has advanced in price. How much, therefore, this Trust gets from customers beyond what competition would be taking we will not presume to say. The Whiskey Trust, if we accept the figures placed in evidence, has even cheapened its product to consumers, besides paying for corn a higher price than previously prevailed.

There is no question that the prices of petroleum have fallen since the Standard Trust was launched; and this fact has been held by writers of high character, as well as by the thoughtless, to justify the Trust's existence and do-

* The yearly *per capita* consumption of the United States is 50 lbs. A rise of a cent kept up for a year costs us \$25,000,000. The refineries not in the trust get for their sugar just the same prices as those in it.

ings. But it argues nothing, since the prices of commodities in general, including crude oil, of which the Standard produces next to none, have been going down during the same period. To make an argument, it would be necessary to prove the fall greater than it could have been had the business remained in the hands of smaller but powerful separate corporations competing with one another. This cannot be shown.

The Standard refines and it transports. We are assured that it does both at vastly less cost than by previous methods. How little it as yet permits the public to share the benefit appears from the following table, figured from oil statistics submitted to the Congressional committee. The reader will please notice particularly the right-hand column.

YEAR.	Average prices per gallon in cents and decimals of a cent.		Differences in cents and decimals.
	Crude, at wells.	Refined, in N.Y.	
1876	5.968	19.16	13.172
1877	5.684	15.44	9.755
1878	2.761	10.76	7.998
1879	2.096	8.08	5.982
1880	2.24	9.06	6.809
1881	2.029	8.01	5.98

TRUST FORMED JANUARY, 1882.

1882	1.873	7.39	5.51
1883	2.519	8.02	5.5
1884	1.993	8.15	6.156
1885	2.106	7.93	5.823
1886	1.696	7.07	5.373
1887	1.587	6.72	5.133

One who remembers that the Trust existed informally so early as 1872 will at first incline to credit it with the swift fall in the differences between that and 1882. No. We have computed these differences back to 1861, and also the percentage of decrease or increase in them from year to year. The result is as follows:—

From 1861 to 1872, inclusive,—i.e., before any trust whatever existed,—the net average annual percentage of <i>decrease</i> in the price of refining oil and carrying it to tide water was	10.4332
From 1873 to 1881, inclusive, the Trust's infirm and formative period, the figure was	7.3897
From 1882 to 1887, inclusive, the years of its full maturity and vigor, it was	2.2879

Another indication that the power and income of these combinations depend in part upon monopoly is their action in limiting production. Each of them has at one time or another caused establishments to suspend business. Factories have been bought for the purpose of being destroyed or permanently closed and makers of machinery indispensable to the best and cheapest production hired not to sell outside the ring. This policy is unaccountable except upon the theory that the managers dread competition, and are determined so far as possible to prevent it. While in order to dictate prices it is not necessary for them to have driven all opposition from the field, they feel safer the more close the approach to such a result.

November 1, 1887, the Standard Oil authorities made a stipulation with the Producers' Protective Association of the oil fields, by which five million barrels of oil belonging to the Standard were set apart for the benefit of the Association, upon its engaging to curtail the production of crude oil at least 17,500 barrels a day. The paper was actually signed by the Standard Oil *Company* of New York; but the Producers understood, and so testified, that they had made it with the Trust.* If at the end of the year the production proved to have been lessened by the

* A most natural confusion. One witness, being asked Mr. Brewster's connection with the Standard, said: "I think he is vice-president. I do not

aforesaid amount, the Producers were to get all that this oil sold for above sixty-two cents a barrel, storage, fire losses, and insurance being first subtracted. To make good its part of the writing, the Producers' Association entered into a covenant with the Well-drillers' Union, agreeing to pay them the profits over sixty-two cents a barrel on one million barrels of oil and part profits on another million, in return for their promise to desist from drilling and cleaning wells throughout the oil field, thus actually rewarding a very large number of men for lying idle. The Drillers called this "earning" the oil. After the date of this agreement, the average reduction was 25,000 barrels a day. Perhaps to the extent of 7,000 barrels it was due to natural shrinkage, but the rest was in consequence of the shut-down. Here you have a deliberate conspiracy between two formidable organizations to limit the production of crude oil so as to raise its price. In great part it succeeded. They hoped to "bull" pipe-line certificates to \$1.50. These went up to 98 cents and \$1.00, soon falling back, indeed, to 75 cents, but not to their old level.

This bit of history presents a curious problem. Pipeliners are at this writing (December 11, 1888) worth 90 cents; and it is quite likely that, when the present stock of oil on hand has been disposed of, the price will, owing to decidedly lessened exuberance of the flow from the wells, continue considerably higher than it was when the contract for closure was concluded. Should this prove to be the case, it will appear that the November manoeuvre had the effect of steadying prices, anticipating a rise that was certain to come anyway, and saving many of the producers from ruin. Fault-finders with the course taken will naturally reply that the relief was procured at the expense of oil-consumers. Correct; but, inasmuch as far

know whether of the big thing or the little thing, but some of the things. He is vice-president of something,—that is what is on his door."

the greater part of these live abroad, the operation will have to be declared a net gain to the United States at the expense of foreigners. Whether, therefore, the compact was justifiable or not involves among other questions a very interesting point of international ethics. The French copper deal raises the same problem. Extortionate as they are to American consumers of the metal, the Secrétan contracts, if carried out, bid fair to yield a net increase to this nation's wealth. It is not certain, for we do not yet know what proportion of our copper can be exported under them.

There is further evidence that the tremendous income which holders of Standard Oil certificates have received has not all been in any economic sense earned. The evidence given and placed before the Congressional committee proved to a demonstration that a vast proportion of the Standard Oil profits had originated in favors from transportation companies. All over the country, during many years, until forbidden by the Interstate Commerce Act, common carriers, to secure its custom, granted to the Standard enormous secret rebates, thus not only enabling it to reap phenomenal returns on whatever business it might have done competitively, but to break down competitor after competitor in the struggle, so as to get many local markets entirely to itself, charging whatever prices it liked. On shipments from Pittsburg to Philadelphia, the Standard for a time received the rebate of more than half the freight, no matter who was the shipper. That these preferentials wrought hardship and were a curse all must agree; yet it is not so easy to say what admitted principle of business ethics they traversed. In demanding them, the Standard was doing only what every house-keeper constantly does in dealing with grocers. It used no force to extort them: it simply said, "If you do not transport for us so and so, we will employ others or else build a line of our own." And the carriers on their part

did but allow their lusty customer advantages the same in nature with those that are continually offered to dealers on a large scale. Nothing but the magnitude of these makes them seem outrageous. Does any one object to the secrecy? That complaint may be just; yet few, certainly, are the jobbers who do not often give to heavy buyers prices which are not to be published.

Sometimes, beyond question, carriers were justified, from a business point of view, in making the figures which are complained of. Thus, testimony showed that the Pacific railways cut rates to the Standard as they did because, if this were refused, the oil would go to the Pacific Coast around Cape Horn. The ships bearing it would take along much other freight as well, and would also return laden with freight. It was an object, therefore, for those lines to secure the oil traffic even without money and without price.

But, speaking generally, it is not so. If the readiness with which managers of great transportation companies hastened to their knees before this mercantile Sesostris, as if sovereign of the world, can in most cases be explained without reflections upon their integrity, their reputation for sagacity must suffer. So suppliant a course was at last found to be fatally impolitic for the grantors themselves. In trampling to death his rivals, the Colossus ground in pieces many who had been and might have continued the railways' best supporters. Then, after they had begun slow suicide in the effort to secure the Standard's gracious favor, it took from them, wherever possible, its own business too, transferring it to its new pipe lines.

Our sources show that the witchery of the Standard Oil interest has penetrated even the political world. For some years it influenced, not to say dominated, in at least one great State, the legislature, executive, and courts. Its wiles in that field, described with large detail in the

records of the Congressional committee, render very clear the political menace resident in these stupendous aggregations of wealth. Only the Nation's arm can cope with them. It is refreshing to turn from the account of Pennsylvania's obsequiousness to that decree of the Interstate Commerce Commission which commands that the Louisville & Nashville Railroad Company "do forthwith cease and henceforward abstain from the unjust discrimination [in favor of the Standard Oil Company of Kentucky] found to exist in its charges for the transportation of petroleum oils as between shipments in barrels and in tanks, and from making any higher charges by the 100 pounds for the transportation of the oils in barrels, including the barrels, than it makes or shall make contemporaneously for the transportation of the like weight of the oils in tanks."

Another question, often mooted by the public and made very prominent in the Congressional investigation, concerns the relation of these combinations to our customs duties system. With a word hereon, our review shall close. A restrictive duty can of course lend no life to local monopolies like the Milk Ring and Butchers' Ring, mentioned above. As little does it aid monopolies over goods like cotton-seed oil, which practically we alone produce. American spirits, also, but for the German export bounty on spirits, would command the markets of the world. Though there is a duty on petroleum, it can at present hardly amount to anything, as foreign producers could not yet compete in America with ours, even were importation free. But in Europe and Asia the Standard is even now in dangerous and growing competition with Russian oil-producers. The great Baku wells are at this moment the most prolific on earth. Their supply seems practically limitless. Within the past few years, the Rothschilds and other large capitalists have invested in the

Russian oil-trade; and, by the aid of American inventions and methods for producing, refining, and transporting, they are putting upon the world's markets some three million barrels of refined oil per annum. It is not as yet the equal of American, but is rapidly improving. Here and there in the Old World the Standard has already been forced to cut prices in order to keep its trade. In time, but for our tariff, Muscovite oil might deluge Pennsylvania itself. No approach to such an event is likely, however. The conflict bids fair to issue rather in a world trust in oil.

The Sugar Trust could be crushed by a reduction of duties. This, no doubt, so perfect has the art of refining become abroad, might ruin our weaker refineries, along with the Trust; but at least the Havemeyers and Elder Company and Claus Spreckels would remain, being able in all likelihood to refine sugar as cheaply as it can be done in the world. How long they would be in combining, first with each other and then, if necessary, with European houses, no one can say. The Bagging-makers' monopoly, too, would fall with the tariff, but would with absolute certainty rise to life again by coming to an understanding with the two combinations, at Dundee and Calcutta, which already control the business abroad. The Copper Syndicate is entirely independent of the tariff. There is good prospect, notwithstanding the many lugubrious prophecies, that it will weather its present ills. Its shares, par 500 francs, stood on November 15 at 947.50, and have since only fallen to 895. It will go to pieces, if at all, only because of a little too fierce greed in placing its prices high,—a mistake easily corrected when, as is certain to occur, the next trial is made. It will then be less extortionate, and therefore successful. Whether this undertaking succeeds at once, or only after failure, or not at all, efforts in imitation of it will unquestionably be put forth to secure international concert in every kind of pro-

duction native to different lands, those leading the way which require great capital, and hence naturally fall to a very few establishments each. Steel rails and beams, electrical apparatus, and all forms of mining will be the most apt to take this course. We, at any rate, look for such a development. The industrial march of the time is that way. Obstacles decrease year by year as the means of communication and transportation improve and multiply, and nations are in effect closer to one another to-day than our States were thirty years ago.

It would seem as if the prices of American beef and wheat could never be made dependent upon the tariff. Yet they may be. The original production of the articles, indeed, cannot be brought into few hands so as to be monopolized; but their transportation can be. Beef is even now at the dictation of four firms, and prices may be forced so high that a tariff duty will be needed to prevent importation. If, then, the people should decline thus to protect them, it is at least conceivable that even these businesses might pass each into the hands of an international trust.

It will be noticed that the industries surest to have such an evolution are precisely those among which international competition now prevails. The meaning of the movement would therefore be that the industries previously protected by the government were learning to protect themselves, thus releasing the State from that task. We may consequently expect that the dependence of trusts upon tariffs will steadily decrease. Perhaps it is to disappear altogether. The interest hitherto centred in the tariff question will then go over to that of trusts. Those who suppose that trusts, however organized, whatever their field, are as a rule going to tumble of their own weight, have not, we believe, duly studied the changed conditions under which the most modern industry is carried on.

E. BENJ. ANDREWS.

APPRECIATION OF GOLD.

In the following pages, I attempt to present briefly the practical outcome of certain somewhat technical investigations which I have lately made concerning variations in the value of money.* The main question upon which these inquiries are designed to throw light is, whether and to what extent gold has been appreciated in recent years. The answer turns upon two preliminary discussions. (a) What is the meaning of appreciation of gold? (b) How is it to be ascertained?

(a) There is reason to think that many of the disputes on this subject are due to the use of the same term in different senses. As it has been happily said of metaphysicians misunderstanding each other, one party makes a good stroke at billiards, and thinks he scores off the other, who is all the time playing chess.

We shall get a simple answer to the question, What is meant by a rise or fall in general prices? if we ask the plain man or the woman concerned more with domestic than political economy. For such a one, a rise of prices means that money does not go so far in the way of purchasing the luxuries, conveniences, and necessities of life. Let us suppose that the average consumption for a whole nation or the largest class of it is capable of being ascertained, and remains pretty constant from year to year (as statistical researches like those of Dr. Engel prove). Then we may define variation in the value of money as the change in the pecuniary value of the na-

* See my "Memorandum on the Methods of ascertaining Variations in the Value of the Monetary Standard" in the *Report of the British Association for 1887*, and a paper on the same subject in the *Journal of the Statistical Society* for June, 1888.

tional consumption per head, the average kit and rations, so to speak.

This is not the only sense in which economists have used our term. There are two other definitions which it is difficult to disentangle, owing to the circumstance that in the instances generally given in the text-books exemplifying what may be called the abstract typical case where the "quantity theory" applies, the denotation is the same for all three conceptions. But, in dealing with concrete facts, very serious confusion may arise from a failing to demarcate these meanings.

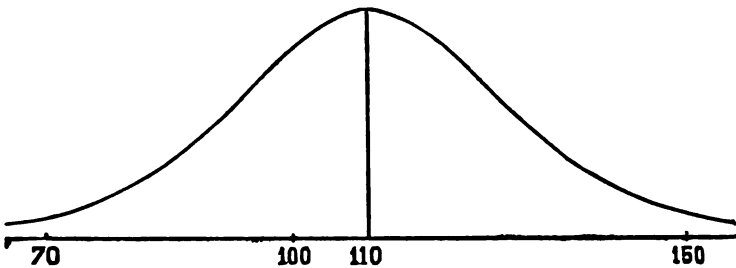
Cournot, the most clear-headed of writers, was perhaps the first who perfectly distinguished the power of purchasing in the sense above indicated from a variation of prices in a more objective sense.* He illustrated the latter species of variation by the analogy of the apparent movement of the stars, due to the yearly motion of the earth round the sun. A better illustration would be the apparent motion of the stars, due to the movement of the solar system in space. For, besides the general drift of the stars in one direction, due to the solar system rushing through space (in an opposite direction), there are "proper disturbances," due to the movement of particular stars or clusters of stars, independent of or superposed on the apparent general movement of the heavenly host.

These astronomical similes render clear in what sense we are to envisage the variation of general prices. From this point of view, we have nothing to do with the importance to the consumer of different articles, any more than we take into account the size of the different stars in determining the relative motion of the solar system. We are to find the average price variation, just as we find the height of the average man without taking

* See chap. ii. of the *Principes* (1838) and the corresponding passage in the later redaction (1863).

account of the weight avoirdupois, or the importance to society of the individual man. We should proceed just as anthropometers do in ascertaining the mean stature of a nation. In that case, we need not have *a priori* any theory about heredity or other cause why one nation or class is taller than another. What is ascertained is that, say, the mean height of Englishmen is sixty-seven and a half inches, of Italians sixty-two. So here we need not import into the facts any monetary theory. What is to be demonstrated by the statistician is whether, as a mere fact, prices on an average have risen or fallen.

The only supposition which the inquiry postulates is that the particular prices should comport themselves in much the same way in respect to their "proper disturbances" that stars or human heights do; that is to say, the whole set of statistics should present a general resemblance to the annexed type. The annexed diagram rep-



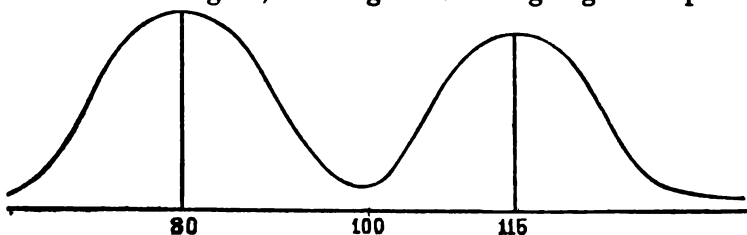
resents in its first intention the various heights of the men in a nation, grouped about their mean value. The abscissa represents height in inches, the ordinate the corresponding number of men enjoying that height. The reader must imagine the proper figures to be filled in. The numerals in the diagram relate to some secondary applications of the figure.

Suppose we wanted to ascertain the mean increase per cent. in the weight of men between two ages. If we found an individual to have increased in weight during that

period of life from ten stone to eleven stone, we might say he had increased ten per cent., from 100 to 110. Let us register the percentage increase of a numerous assortment of men. Then the diagram might represent the sort of statistics thus obtained. The ratio of increase most frequent would be 110. Many, however, would not have increased at all; some, as happens at an advanced age, would have actually declined in bulk; others would have put on flesh in extraordinary quantities. The mean percentage growth would be 110.

The same figure may be used to represent the dispersion of prices. Suppose beef has risen from 1*s.* to 1*s.* 3*d.*,—that is, 25 per cent.: then we may designate that change as a rise from 100 to 125. Similarly, we may suppose all the prices to start at 100, and to gain or lose a percentage. Conceive, then, that all the prices are, so to speak, placed initially at the point on the abscissa marked 100. In the interval of time under consideration there will occur a dispersion of percentages such as the figure represents. A large proportion of prices will have risen from 100 to 110; supposing, as in the case examined by Jevons, that there was a mean rise of 110. A smaller number may remain unchanged at 100. A smaller number will sink to 80, a number still smaller to 70. So, also, it is only in rare instances that prices will rise very high above the mean variation 110, say to 140 and higher.

Well, then, it must be postulated for the present purpose that this sort of arrangement is fulfilled by our statistics of prices approximately, at least, and hypothetically. The dispersion of prices must not correspond to the annexed figure, one large class rising together up to



115, while another and compact cluster falls to 80. In this case, the mean value — it may be $97\frac{1}{2}$ — does not, as in the former case, correspond to anything worth measuring. We may say that one category has risen to 115, another fallen to 80, but we cannot usefully measure in the sense just explained the *general* variation of prices.

In this abnormal case there becomes visible a *third* definition of appreciation (and its converse), which, under ordinary circumstances, is apt to be undistinguishable. It is thus that during the eclipse of the sun we are able to distinguish bodies in its proximity which, ordinarily, are lost in its effulgence.

To fix the ideas, let us leave out of sight the sale of services, and let us employ the useful conception lately introduced by Sir Rawson Rawson of "an average ton of commodity," — all kinds of commodities, whether ready for consumption or of the nature of tools and materials. Suppose, then, the average ton of commodity sold per year consists of a hundred weight of coals, a hundred weight of iron, so many pounds of indigo, and it may be ounces or grains of nutmeg. Now, if the prices for one moiety of this set go up *en bloc* and for the other go down, we are agreed that it is not significant to speak of a mean price. The statistics of price *per se* and in the absence of some hypothesis do not present any unique *type*. For instance, if we did not know but what all the prices related to credit transactions, then I think the mean of two such discrete clusters would have no significance, would be what the Germans call an *Unding*. But let it be granted that the ton of mixed commodity is moved by metallic currency, then we may regard as measurable the increase or decrease in the quantity of gold which goes to a ton of commodity moved by gold, which, in the phrase of Petty, is required to "drive" that portion of trade. Thus, then, we reach the third definition of variation of prices, — namely, variation

in the quantity of metallic currency relative to the work it has to do; that is, to the volume of transactions effected by payments in hard cash.

This conception will be found implicit in much that is written on the subject. For instance, Mr. Forsell and others speak of attaching importance to the respective price returns, when combining them to form a measure of the mean variation, according to the degree in which some transactions "absorb" more currency than others. I am fortunate in being able to complete the definition of this conception by quoting from one who never fails to impart clearness to any subject which he discusses,—Professor H. S. Foxwell. Writing to me with reference to the work of the committee appointed by the British Association to consider methods of ascertaining variations in the value of money, he thus expresses himself:—

I consider that the degree in which a commodity is the subject of speculative dealing would have to be taken account of in the construction of a tabular standard. . . . I presume the intention in allowing for the bulk of a commodity and the number of sales, or, in other words, for the *amount of sales* in a commodity, is to measure the extent to which the commodity figures as constituting a demand for money. . . . My point is that, in the case of a speculative commodity, variation in the amount of sales does not necessarily mean any variation, certainly not any corresponding variation in the demand for money.

Two shades of the conception here defined may be distinguished according as the area over which we estimate the amount of gold relative to its work extends over the whole plexus of countries in monetary communication—the *Münzgebiet*, as the Germans say—or is limited by a frontier permeable to the precious metal. The former is, I think, the more appropriate conception. The variation in the amount of gold thus defined corresponds to the ratio in which the quantity of precious metals would

have to be increased in order to restore the level of prices to a *statu quo*, so far as it may be the duty of government to attempt such restoration; that is, so far as the disturbance has been due to the deficiency of the currency in relation to the work which it has to do. But the variation in the quantity of gold in relation to its work for any particular country, for any one creek of the monetary lake-system, does not, I think, equally form the answer to any conceivably practical question. This latter conception has hardly, I think, a substantive reality, though it may have a certain use as an adjunct to our *second* method of ascertaining appreciation or depreciation. It is thus that I understand Mr. Giffen in his classical paper on Depreciation to make use of the ratio between the volume of transactions and the quantity of gold in England.* The *quæsitum* in Mr. Giffen's investigation I take to be a mean variation in some such sense as our *second*. He determines the depreciation in this sense: First, directly by actually taking the average variation of a large number of miscellaneous prices. Then, by way of verification or collateral proof for that *quæsitum*, he estimates the change in the ratio between the metallic currency in England and the work it has to do. I doubt if he would have concerned himself about his second operation if the first had proved utterly nugatory owing to the statistical abnormality, the two-headed development of the price-curve which I have noticed above.

To sum up the results of this initial discussion: We have seen that there are at least three different definitions of appreciation and its converse, distinct in idea and connotation, though apt to be coincident in fact. The first may be described as subjective, being grounded on the relation of prices to certain human wants, such as the requirements of the consumer. The second *quæsitum* is a mere average,—a type which gathers the statistical phenomena into an ideal unity without reference to

* *Essays in Finance*, Series I.

any special use or particular hypothesis. The chief use contemplated is the general purposes of scientific inquiry, the sort of use to which the analogous measurement of mean stature is put by statisticians, when they conclude, like Mr. Galton, by a comparison of averages, that certain trades or localities are unfavorable to the development of the human body. Thirdly, we may regard price variation as the expression and measure of a real objective thing; namely, the change in the quantity of metallic currency per ton (or other unit) of commodity paid for in hard cash. If we call the third definition as distinguished from the first objective, we may regard the second as semi-objective or typical.

(b) We have next to consider how to ascertain appreciation. This has been already in part effected. For, in defining what it is we seek, we have indicated where to look for it. "The beginning is half the whole" in this sense. Nor are we concerned with the whole investigation here. It is proposed to point out only the general line or rather lines of inquiry, not the tortuous technicalities of each path. Speaking generally, then, we may say that our problem is to combine price-variations given as percentages into a mean or so-called index number, and that the rules required are mainly of two kinds,—prescribing what prices, if any, are to be altogether omitted from the combination, and what relative importance is to be assigned to each of those which are to enter into the average. The rules on these points differ according to the different definitions of the *quæsitum*.

(1) For the first sort of average, the subjective mean above described, we are to take account only of commodities adapted for immediate consumption, omitting goods which are useful only as means, not ends. Thus we shall include Anchovies, Beef, etc., but not Alkali, etc. The importance assigned to each price will be pro-

portioned to the amount consumed of the corresponding article. Thus the required combination will be of the following type,—

$$\frac{\left[\text{Anchovies, quantity consumed per annum,} \right] \times \left\{ \text{Present price of anchovies,} \right\} + \left[\text{Beef, quantity consumed per annum,} \right] \times \left\{ \text{Present price of beef,} \right\} + \&c.}{\left[\text{Anchovies, quantity consumed per annum,} \right] \times \left\{ \text{Original price of anchovies,} \right\} + \left[\text{Beef, quantity consumed per annum,} \right] \times \left\{ \text{Original price of beef,} \right\} + \&c.}$$

where the original price of Beef designates the price at that initial epoch between which and the present time a comparison is indicated. In a first approximation, it may be assumed that the quantities remain constant from year to year, as, in fact, is pretty nearly true. We are not here concerned with the technical devices by which greater precision is attainable. Suffice it to say that any error committed in assigning a wrong weight to one price, say Anchovies, is apt to be compensated by the independent fortuitous error incurred in treating another article, it may be Beef.

(2) For the purpose of a mere average or type, we are to take account of all manner of goods, and we are not concerned with the quantity of each commodity. We have for this purpose only to ascertain the ratios or percentages, such as

$$\frac{\text{Present Price of Anchovies}}{\text{Original Price of Anchovies}}; \quad \frac{\text{Present Price of Alkali}}{\text{Original Price of Alkali}}; \quad \frac{\text{Present Price of Beef}}{\text{Original Price of Beef}} \&c.,$$

and then to take a simple or unweighted mean of these ratios: that is a mode of combination which is symmetrical with respect to all these elements, not assigning more weight or importance to one price than another. The common arithmetical mean is the simplest and most familiar form of this sort of combination. But for certain technical reasons, which it is beyond the scope of this paper to enter into, the arithmetical mean is not so suited

to the statistics of prices as the geometric mean employed by Jevons, or a certain other species of mean commonly called the median. But, whatever genus of average is adopted, the simple or *unweighted* species thereof is appropriate to the aspect of the problem now under consideration.

This rule will excite the mirth of some. What, they will exclaim, assign the same importance to pepper and nutmeg as cotton and iron! Yes, I reply, for the present purpose, just as in ascertaining the (variation of the) rainfall of a district by an examination of several rain-gauges placed in a variety of suitable spots, I would not, in combining their results, assign more weight to the larger receptacles. The size of a vessel is, with reference to its use as a cistern, an all-important circumstance, but for the purpose of a rain-gauge comparatively indifferent. The reason of the objector's surprise is that he has never cleared his ideas as to what it is he seeks. He wants a cistern, while I am arranging for a rain-gauge. I make a break at billiards, and he calls out, "Check!"

However, it may be admitted that, though there is no peculiar propriety in using a *weighted* mean for the present purpose, at the same time there is not much harm in doing so. If a true average (in the sense above explained) exists, then it is not likely that much difference in the result will be produced by "weighting" each of our price variations according to the quantities of the corresponding article.* Moreover, in this way we may best attain what may seem to be the object of some,—a sort of compromise mode of measurement, or jack-of-all-trades index number, adapted as well as may be to the fulfilment of purposes which, in a more perfect division of labor, should be pursued separately. For these reasons there is not much objection to modifying our second

* On this point, see my "Memorandum on the Accuracy of Index Numbers," prepared for the British Association, 1888.

formula by taking account of quantities.* Then each ratio of the form

$$\frac{\text{Present Price of Anchovies}}{\text{Original Price of Anchovies}}; \quad \frac{\text{Present Price of Alkali}}{\text{Original Price of Alkali,}} \&c.,$$

is to be weighted by some such factor as,—

$$\left\{ \begin{array}{l} \text{Total Value of Anchovies} \\ \text{consumed per annum at} \\ \text{Original Price,} \end{array} \right\} \quad \left\{ \begin{array}{l} \text{Total Value of Alkali} \\ \text{consumed per annum} \\ \text{at Original Price,} \end{array} \right\} \&c.$$

If we use the most familiar mode of combination of the sort called arithmetical, we shall thus obtain a formula similar to our first, except that here all manner of articles enter in,—Alkali as well as Anchovies.

(3) The same formula will serve as a first approximation to the third form of index number. In other words, if the composite “average ton” above described consists of, say, two hundred-weight of coal, one hundred-weight of cotton, one pound, or .0005 hundred-weight, of *pepper*, then the index number is of the form,—

$$\frac{[2 \times \left\{ \begin{array}{l} \text{Present Price} \\ \text{of Coal,} \end{array} \right\}] + [1 \times \left\{ \begin{array}{l} \text{Present Price} \\ \text{of Cotton,} \end{array} \right\}] + \&c. + [.0005 \times \left\{ \begin{array}{l} \text{Present Price} \\ \text{of Pepper.} \end{array} \right\}]}{[2 \times \left\{ \begin{array}{l} \text{Original Price} \\ \text{of Coal,} \end{array} \right\}] + [1 \times \left\{ \begin{array}{l} \text{Original Price} \\ \text{of Cotton,} \end{array} \right\}] + \&c. + [.0005 \times \left\{ \begin{array}{l} \text{Original Price} \\ \text{of Pepper.} \end{array} \right\}]}$$

that is, supposing that the amount of currency required to “drive” (in Petty’s phrase) a pound of coal or cotton is the same as the amount required by a pound of pepper, and supposing also a number of “other things” at the two epochs compared to remain the same.

For a second approximation, we ought to take account that the “demand for money” in the sense defined by the extract above cited † is not, as pointed out by Pro-

* Compare the Second Report (drawn up by Mr. Giffen) of the Committee appointed by the British Association to ascertain the best method of measuring variations in the value of the monetary standard. *Report of British Association*, 1888.

† See p. 158.

fessor Foxwell, simply proportional to the "amount of sales" in the commodity. Thus it is proper to affect each of the elements in the last written formula with a factor or coefficient corresponding to the demand on the currency as varying with the *quality* of different articles. Thus *cotton*, owing to the speculative character of transactions in it, may require per pound of commodity less currency to drive the trade than, say, *pepper*. No doubt such corrections would be individually very inexact. But, owing to the compensation of errors which I have already alluded to as coming into play in such formulæ, the total result would have great claim to accuracy but for an imperfection of which the full importance has not, I think, been recognized.

In our first and second approximations, we have taken for granted that "other things" remain the same at the compared epochs: in particular, the proportion of credit to hard cash transactions and the rapidity of currency. Now, in so far as these coefficients vary for different articles, these variations might be ignored on the principle of compensation. And it is possible also to get rid of what are called the "periodical" ups and downs of credit by taking an average over a long period. We might, for instance, compare the average prices for the period 1875-85 with those for 1865-75. But we cannot thus get rid of the *secular* variation in the relation between credit and cash transactions, of changes in what has been happily called the organization of credit. The same remark applies to the progressive variations in the rapidity of currency, which there is reason to believe are taking place. Moreover, these changes affecting industry as *a whole* are not subject to that law of compensation which has enabled us to wink at errors in the *parts* of our computation. In fact, in virtue of these secular changes, our result is affected by factors which, in the present state of science, I venture to regard as purely conjectural.

I speak of the attempt to assign in the *a priori* method described the relation between gold and the work of transfer it has to do for the whole system of countries in monetary combination. No doubt for a particular country we may, with more confidence, assign a value to the unknown factors. Thus Mr. Giffen postulated that the relation of credit to cash transactions in the United Kingdom had not much altered in the period under his review. His assumption has been doubted by high authorities; * but, at any rate, it is of a sort which could not with safety be extended to the *Münzgebiet*.

I conclude therefore that the method which leads to our *quæsitum* is completely blocked by statistical difficulties. I mean the direct path proper to this scope. For, of course, if a true average in our second sense, a typical variation of prices is, and is ascertainable, we may deduce from the reasoning proper to the *second* method a conclusion admissible of the third *quæsitum*. If it is true that all prices on an average have decreased by, say, ten per cent., then it is sure to be true that the price of an "average ton" has decreased by about the same percentage. Accordingly, it may easily be deduced if we mentally abstract from the great volume of transactions that sphere thereof which is permeated by pure gold. It will be approximately true that to every composite ton within that sphere there goes ten per cent. less gold now than originally.

(c) After this preliminary discussion, we are now at length in a position to approach the main question, whether in recent times gold has been appreciated. From what has been said, the reader will be prepared to find the answer articulated, diversified according to the shades of meaning which may be attached to the question. In the

* As by Mr. J. B. Martin, *Journal of the Institute of Bankers*.

subjective sense above defined, I think it is reasonably certain that there is at present — as compared, say, with 1867–77, Mr. Sauerbeck's initial period — a considerable appreciation; though it must be remembered that the level of prices which affects consumers is that of retail dealings, concerning which we have not accurate information. Much the same, I imagine, is true of the other civilized countries. So much will be admitted by many who yet deny that there has been a fall of prices in a more objective sense. The interest of the controversy concentrates about our second conception. For, as it has been shown, the third *quæsitum* does not lead in practice to any distinct method of investigation. On this question are we to side with Messrs. Forsell, Laughlin,* and Wells,† or with the bimetallists?

I fear that I cannot give an unqualified assent to the advocates on either of the sides. On the one hand, many of the arguments used to prove that there has not been a fall in general prices appear to me altogether wide of the mark. To assert with Mr. Laughlin‡ and others that, in order to prove a general fall, you must prove a fall in every article, is wholly to ignore the character of the investigation. The phenomenon under examination is of the nature of what Mill called a "residual phenomenon," like the difference in the mean height of the barometer between two hours of the day, the so-called "diurnal variation." On an average of many days there is found to be a fall, but it is not necessary nor true that every day, experience should present that phenomenon. The theory of probabilities is satisfied with a majority of days. The figure at p. 156 will put the matter in a clear light. It will be seen there that there is a mean rise of ten per cent.; though many items not only do not rise, but fall.

* *Quarterly Journal of Economics*, April, 1887.

† *Contemporary Review*, 1887.

‡ *Quarterly Journal of Economics*. Cf. Mr. David Wells, *Contemporary Review*, November, 1887, p. 63.

The slightest acquaintance with the theory of errors of observation will show the justice of this conception.

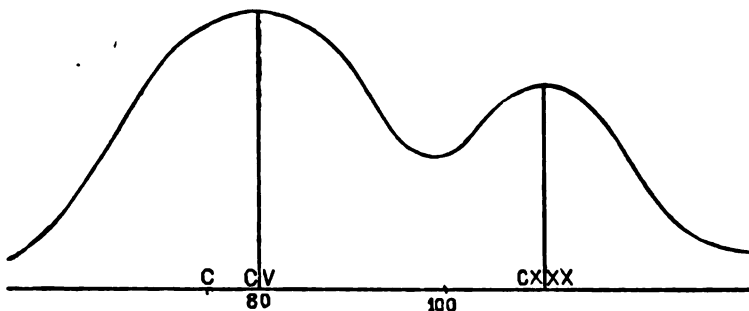
The same illustration disposes of another objection. It seems to be taken for granted * that, when we can show a reason why each price should have varied in the direction actually observed, we are thereby debarred from inferring a general displacement due, in the phrase of Mill, to "causes that operate on all goods whatever." † But this assumption is quite erroneous. The meteorologist may be able to assign the reason why between morning and noon each particular day there has been a rise or fall of the barometer. But the mathematician is not thereby precluded from extricating by the theory of probabilities a mean variation between those hours.

At the same time, while so far siding with the bimetallic faction, I cannot agree that reasonings like those of Mr. David Wells in the *Contemporary* of October and November, 1887, are *nihil ad rem*. They go to prove that the variation of prices may be disposed in two distinct categories (like those above represented); namely, (1) where the cost of transport or other expenses of production have diminished, and (2) where this agency has not operated. The argument, properly interpreted, is good as to quality. The only question is whether it is efficacious as to quantity. This is a question of degree, for deciding which there are required the appropriate conceptions of the calculus of probabilities, informed by extensive practical knowledge. I cannot make any claim to the latter part of the condition. But, as a mere opinion, and by way of showing what sort of conclusion is attainable, I submit that the state of facts is probably

* *E.g.*, Mr. Wells, in his articles in the *Contemporary Review*, October and November, 1887.

† The reader will please observe the happy generality of Mill's language. Whether the common cause is on the side of gold or goods is not here our concern.

capable of being represented in some such form as the annexed diagram.



The main peak corresponds to a fairly general fall of twenty per cent. There are, however, certain categories of prices which exhibit no fall, but rather a rise; perhaps capable of being grouped into a distinguishable, but not altogether separate, type. Under such circumstances, it is a nice question for practical judgment whether we can at least hypothetically posit a unique type. That there are exceptional outlying categories, as the figure represents, is not a decisive objection to this hypothesis. For, if statisticians were extreme to mark such irregularities, it would be impossible to find anywhere in *rerum natura* types of the kind which Quetelet has made familiar. Take the ratio of male to female births, the phenomenon in concrete statistics which best complies with the ideal rules of the calculus of probabilities. Yet the distribution of these statistics, nearly viewed, would probably present a form somewhat like the above. Let the percentage of male over female births in any district be represented by the distance along the abscissa from the point *c*, corresponding to 100 female births, while the ordinates represent the number of districts presenting each ratio. Then the most frequent ratio would correspond to a peak about 104 or 105, marked as *cv* (100 being now indicated by *c*). But there might be a little

peak higher up the scale,—rather smaller than in the figure,—corresponding to the category of *still-born* children, in which the proportion of males to females is far above 104 : 100, say 130 : 100 (corresponding to the point marked *cxxx*). Yet this irregularity does not prohibit us from speaking of the mean ratio of male to female births as 104 : 100 in England. Similarly, I am prepared to accept the statement that there has been an average decline of prices by so much per cent. Or, translating this statement into other terms (according to the reasoning above explained), I think it quite likely that throughout the civilized world there has been a decrease of money in relation to the work which it has to perform.

As to the cause of this phenomenon, I do not pretend to an important opinion. If, in the eternal race between gold and goods, gold seems at present to have fallen behind, I leave it to nicer observers to determine whether it is the gold which has been curbed or the goods which have been spurred, or whether and in what degree both agencies may have operated. The remedy of the disturbance which has occurred is a subject still further *ultra crepidam*.

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RAILROAD BUSINESS UNDER THE INTER- STATE COMMERCE ACT.

NATIONAL railroad control has developed with startling rapidity. Two years ago, it was a question in what form the Interstate Commerce Law would pass. One year ago, people were still asking what it meant. To-day, we may treat it as an accomplished fact, and enquire, What are its actual effects on business? It is, of course, too early to expect a definite answer to this last question; but it is not too early to attempt a provisional one.

The primary intent of the law was to abolish the system of special bargains in dealings between railroads and shippers, and to substitute in its place a system of tariff rates. For a time, it was thought that this had been successfully accomplished. Even now the failure is by no means so complete as some people think. In most parts of the country, the provisions against personal discrimination are tolerably well obeyed. When matters are at their worst, there is evasion rather than direct violation. The most important instances are often unknown to any but the local agents, and not explicitly countenanced by their superiors. Of open defiance of the provisions against personal discrimination there is surprisingly little.*

The attempt to check local discrimination has also been more successful than was generally anticipated. Comparatively few of the railroad tariffs now conflict with the "short-haul" principle, and charge more for a part of a route than for the whole. The effort to evade this portion of the law is chiefly seen in the adoption of forms of clas-

* Existing violations are often quite as much the fault of the shippers as of the railroads. The Commission has more than once recommended that shippers be held responsible for such wilful violation by false description of goods. *In re Underbilling*, 1 Interstate Commerce, 633; Second Annual Report, p. 69.

sification which favor through traffic rather than local. Through traffic is mostly carried in full carloads; local traffic, in parcels. It is obvious that a tariff of rates which charges carloads at relatively low figures and parcels at relatively high ones will continue some of the old discrimination in favor of trade centres. In form at least, such a discrimination does not violate the letter of the law. Whether it is admissible or not under present circumstances is a matter for the Commission to decide. Of all the questions of practice involved in the construction of the act, this is perhaps the most important, and is certainly the most difficult. It may be some months before anything like a general solution is attempted.

The reaction against disproportionately high local charges and the movement towards conformity with the short-haul principle had already begun some time before the passage of the act; and it had in many districts gone so far that it was easy to do what was left in order to meet the requirements of the law. In the South and on the Transcontinental lines, the process was slower. The Louisville & Nashville decision left it open to railroads to delay the readjustment of their tariffs in cases of uncontrolled competition. Through shipments by Southern lines were more or less directly subject to such competition from water routes, while the Transcontinental lines were able to plead a similar dependence on the action of the Canadian Pacific. In the year 1887, little was accomplished in applying the short-haul principle in either of the districts named. In 1888 there has been much more progress in this respect, especially on the Transcontinental lines; nor can the accomplishment of the same result in the South be long delayed.

It was much easier for the strong roads to obey the short-haul clause than for the weak ones. There were several reasons for this. In the first place, the strong roads had, for the most part, pursued a far-sighted policy in developing their local traffic. They had of their own free

will made reductions which brought their tariffs into substantial conformity with the provisions of the act. On the other hand, the weak roads had been subject to a double difficulty. To secure any through traffic, they had been forced to make their through rates as low as those of their stronger competitors, and sometimes even lower, when the shipper required special inducements to send his goods by the less known or less responsible route. Meantime, the high operating expenses of these roads had made their local traffic more costly to handle. The difficulty felt by their managers in making both ends meet rendered it impossible to reduce such local rates, and thus sacrifice present revenue for the sake of future gain in the growth of the district. When the Interstate Commerce Law went into effect, these roads found themselves somewhat suddenly forced to equalize charges which had hitherto been arranged on quite different principles.* They could not raise their through rates to any great extent, without abandoning all effort to share in the competitive traffic. They were thus forced to make considerable reductions in their whole scale of local rates.

If we examine the reports of the various trunk-lines, we shall find abundant indications of these effects. The strong roads, as a rule, show little change in their general schedule of charges, and an increase in the volume of through traffic even more conspicuous than that in local business. On the other hand, the weaker roads show decided reductions in average local rates, combined with conspicuous gains in volume of local business and relative, if not absolute, loss of through business. The Chesapeake & Ohio, for instance, showed a direct shrinkage of

* "It is quite clear that the more powerful corporations of the country, controlling the largest traffic and operating on the chief lines of trade through the most thickly settled districts, can conform to the statutory rule with much more ease and much less apparent danger of loss of income than can the weaker lines, whose business is comparatively light, and perhaps admits of no dividends, and the pressure of whose fixed charges imposes a constant struggle to avoid bankruptcy." First Annual Report of the Interstate Commerce Commission, p. 17.

7½ per cent. in gross earnings from through freight, an increase in local freight earnings which more than counterbalanced it; and yet, in spite of this, the average freight receipts per ton-mile fell from 0.541 cents in 1886 to 0.536 cents in 1887.*

In almost all these cases there was a decided gain in gross earnings. As these gains were reported from week to week in the summer months of 1887, they produced an impression of great apparent prosperity, and stimulated the mania for new railroad construction. The managers desired to build new lines because they believed that there was traffic enough to keep them fully occupied. The investors were ready to furnish the money because the figures of traffic seemed to indicate that there was chance for a profitable investment. No less than 12,688 miles † were built in the year 1887 alone.

But matters were really not in so good a state as was supposed. Figures of net earnings did not show the substantial gain which was expected. Even where gross receipts had increased decidedly, the change in net earnings was smaller. Where gross receipts had remained stationary, net earnings showed a positive falling off. The general result for the year 1887, as given in Poor's *Manual* for 1888, is as follows:—

	1886.	1887.	Change per cent.
Gross earnings	\$829,940,836.00	\$940,150,702.00	+13
" " per mile	6,570.00	6,861.00	+4½
" " per train-mile	1.443	1.445	0
Net earnings	300,603,564.00	334,989,119.00	+11
" " per mile	2,376.00	2,444.00	+2¾
" " per train-mile	0.533	0.514	-1½

* "On both classes of roads there was a tendency toward lower local rates and higher through rates; but on the weak roads the former result was most obvious, and on the stronger roads the latter. In comparing the annual reports for 1887 with those for 1886, we find on the weak roads lower average ton-mile rates, large gains on the local traffic and actual reduction in through freight earnings; while on the strong roads we find, on the whole, higher ton-mile rates and considerable gains on through freight. So marked is this tendency in some cases, that the Lake Shore, for instance, shows at once a higher average ton-mile rate and longer average haul." *Railroad Gazette*, June 8, 1888.

† Second Annual Report of Interstate Commerce Commission, p. 1. Poor's *Manual* places the figure somewhat higher.

This by no means shows the full effect of the change; for many of these figures cover months previous to the time when the law went into operation, and none of them are late enough to reflect the full result of the railroad expansion of 1887. It should also be remembered that the year 1885-86, with which these figures are compared, was not a particularly successful one in railroad business. It is a most significant fact that under these circumstances an increase of $4\frac{1}{2}$ per cent. in gross earnings per mile was accompanied by a positive loss of $1\frac{1}{2}$ per cent. in net earnings per train-mile.

The failure to increase net earnings shows that the conditions of operation in 1887 and 1888 were in some respects less favorable than in the previous years; or, to put it more accurately, that operating expenses increased relatively faster than gross earnings. In some cases, this increase of operating expenses was apparent rather than real. In analyzing the reports of the Pennsylvania Company or the New York Central, we find that the apparent increase of expenses in 1887 was due to unusual payments for repairs, which were somewhat arbitrarily charged upon the traffic of that year. But in most cases we find an increase in the amounts paid for transportation charges. To some extent, this is due to the larger proportionate amount of local traffic under the operation of the Interstate Commerce Act. More commonly, it indicates an increase of traffic by reductions in charge that have been carried beyond the point which good railroad economy allows. Especially is this the case on several of the great Western systems, like the St. Paul, the Burlington, or the Atchison.

The effect of the increased traffic is to produce a special demand for railroad labor. In the majority of detailed railroad reports, we find some allusion to increased wages as an important element in expense. When a railroad company paid higher wages, and at the same time did its

business at lower rates, its profits were cut down at both ends. If, on the other hand, it attempted to avoid the payment of higher wages, it was liable to a strike at a time when it could least afford it. The labor organizations were conscious that they had the railroads of the country at a disadvantage, and they used their power with considerable effect. Even when a road, like the Burlington, resisted their demands, and gained a victory, the result was so dearly purchased as to make other companies hesitate about following such an example; and this state of affairs, while it increased expenses, tended on the whole to lessen the efficiency of discipline. It can hardly be a matter of mere chance that such an unusual number of railroad accidents have occurred within two years past. With the quick expansion of the railroad system, it has been necessary to employ new men. In any unusual strain upon the operating department, the evil effects of this condition make themselves felt. If a road is in financial difficulties, or if its relations with its workmen are in any wise questionable, the chance of accident is vastly increased. We must not, of course, consider the recent frequency of railroad accidents as a result of the Interstate Commerce Law, especially since some of the worst of them have happened before the law went into effect; but they are the symptoms of a condition of affairs under which the application of the law becomes more difficult.

As the new railroad mileage was brought into operation, all these evil effects were intensified. It often happened that a line which was unable to secure a profitable business attempted to make its neighbor's business unprofitable, and succeeded only too well. In this respect, the effects of the Interstate Commerce Act were decidedly bad. If one road already enjoyed a large local business, and a competing road was built which had little or none, the latter was in by far the stronger fighting position.

The Interstate Commerce Law, by compelling the reduction of the local rates to the standard of through rates, handicapped the sounder road in any contest which might arise; while by the prohibition of pooling it ensured the recurrence of such contests. From this evil effect of the law, the Interstate Commerce Commission gave no relief. Under the language of the act, it was perhaps impossible to expect any such help. Yet the manner in which they have treated the subject has been a serious disappointment to many students of the railroad question. While admitting the difficulties of the situation, they speak as follows of their own authority: "The act has doubtless conferred upon the Commission a greater power to protect localities against the carriers than it has to protect the carriers against themselves or against each other. It was probably thought in Congress that, were the liberty of action left to the carriers, they would not needlessly rush to destruction. The assumption may not prove to be well founded; but nothing seems plainer than that, under the law as it stands, the protection of carriers against destructive rivalry and rates that lead directly to bankruptcy must be found chiefly in prudent management, in the cultivation of reasonable relations among themselves, in mutual forbearance and the application of a sense of justice to their mutual dealings and in their rivalries." *

This statement of the case is not quite fair. The practical difficulty is that the law, by the clause prohibiting pools, has rendered it nearly impossible for the railroads to cultivate such reasonable relations with one another; or, rather, it has made it possible for the most reckless manager among several rival companies to dictate the policy of them all. The Commission may not have the technical authority to protect investors' interests under these circumstances; but, in a large number of their pre-

*2 Interstate Commerce Report, pp. 266, 267.

vious decisions, they have far exceeded the limits of the technical authority which the act was intended to confer upon them. The Commission has had an unexpected power, because it showed itself a responsible protector for a variety of interests. If it shrinks from exercising that office in behalf of the investor, it will have a most damaging effect upon its ultimate authority and influence. The Interstate Commerce Law, as the Commission says, in its first annual report to Congress, was not intended to destroy, but to conserve and protect. If the law is found to be really destructive, it must produce a reaction which, sooner or later, will seriously impair its efficiency in every respect.

The need of conservative action at the present juncture is heightened by the attitude of State legislatures. The regulation of railroad rates is not taking precisely the same form to-day that it did in the agitation of 1873 and 1874, but it is hardly less sweeping in its effects. The debates in many of the State legislatures, and particularly in that of Iowa, show an avowed disregard of the most elementary principles of law. The State legislature is acting in the interest of those who use the road and against that of those who own it. Under such circumstances, the question of protecting railroad investors becomes a matter of the highest practical moment. There is most serious cause for regret that the Interstate Commerce Commission should have been forced to choose the present time for disclaiming the power to act in this way.

While the roads were thus left unprotected from outside, the pooling clause has made it impossible for them to protect themselves. The high nominal standard of virtue required by the law, coupled with the impossibility of enforcing it against rivals or of getting any reward for it one's self, has led first to mutual suspicion and then to serious evasions. Publicity and stability of rates, desirable alike for the railroads and the public, have been thus

sacrificed. Reductions are often made by irresponsible agents, with little or no benefit to legitimate trade and damaging loss to the railroads concerned.

As the result of these influences, the value of railroad property has fallen enormously. It is doubtful whether the combined effect of the crisis of 1873 and the Granger legislation of the same period produced any greater aggregate effect in depressing prices. Of forty-seven among the more important active stocks quoted in New York City,* only four show an advance, which is slight in each case: the remainder show a decline, and usually a very marked one. The par value of these stocks was a little over \$1,500,000,000. Their actual value on April 4, 1887, when the Interstate Commerce Law went into effect, was about \$1,000,000,000. On December 4, 1888, their value was less than \$800,000,000, a loss of over 20 per cent. in twenty months, and of \$210,000,000 in aggregate value.†

* In making up the list, those active stocks have been omitted (1) which are not directly affected by the act (like Manhattan or Canadian Pacific); (2) those which amount to less than \$10,000,000 par value; (3) those which have had large payments on stock or new stock issues of magnitude. The list itself is as follows:—

	Price April 4, 1887.	Price Dec. 4, 1888.		Price April 4, 1887.	Price Dec. 4, 1888.
Security.			Security.		
Atchafson, Top. & S. F.....	106½	53½	Lake Shore & M. S.....	96½	99½
Atlantic & Pacific.....	12½	7½	Louisville & Nashville ..	67½	53½
Canada Southern.....	62½	51½	Michigan Central.....	93½	85
Central of N. J.....	75½	89½	Mo., Kan. & Texas.....	33½	12½
Central Pacific.....	40½	34	Missouri Pacific.....	109½	69½
C., B. & Q.....	140½	106½	N.Y. C. & H. R.	113½	107
C., M. & St. Paul.....	93½	61½	N.Y., L. E. & Western ...	34½	25½
“ “ pref.	123	101½	N.Y. & New England....	64½	83½
C. & N.W.....	121	104½	N.Y., Ont. & Western ...	19	15
“ “ pref.	147½	137	N.Y., Susq. & West.....	13½	8½
C., R. I. & P.....	128	99½	“ “ pref.	31½	30½
C., St. L. & Pitts., pref. ..	48½	34	Norfolk & Western.....	22½	16½
C., St. P., M. & Omaha ..	51½	31½	“ “ pref.	52½	48
“ “ “.....	112½	97½	Northern Pacific.....	29	24½
C., C., C. & L.....	65½	53	“ “ pref.	60½	58½
Col. Hook. Val. & Tol. ...	32½	23½	Ohio & Mississippi.....	32½	21½
D., L. & W.....	134½	135½	Oreg. & Transcon.....	83½	29½
Denver & E. G.....	31½	16	Richmond & West Ft....	42	23½
“ “ pref.	64½	43½	St. Louis, Ark. & Tex....	23½	8
E. T., Va. & G.....	14	8½	St. L. & San Fran.....	34½	23½
“ “ 1st pref.	75	65	“ “ pref.	70½	63
“ “ 2d pref.	26½	20	St. P., Min. & Man.....	118	90½
Lake Erie & West.....	23½	16	Union Pacific.....	61½	62½
“ “ pref.	56½	47½			

† A similar list of forty-five stocks in the *Railroad Gazette* of September 27, 1878, shows a larger percentage fall in the crisis of 1873, but a smaller aggregate one; the maximum value being \$567,000,000, and the minimum \$380,000,000.

It is not probable that other railroad stocks have changed in quite the same ratio. The inactive stocks have in many instances shown a tendency to rise. But the general movement has been a downward one; and, as the list given includes only a little over one-third of the railroads of the country, and does not include some companies which have been among the most severe sufferers, it is not unlikely that the total depreciation of railroad stock during the operation of the Interstate Commerce Act may have amounted to something like \$500,000,000.

To those interested in the financial prosperity of the country, such a result is obviously most unfortunate. It is not until recently that the magnitude of the change has been appreciated by the public. It has resulted in a movement for the modification of some of the provisions of the Interstate Commerce Act, and particularly of the clause against pooling. A collection of opinions published in a recent number of *Bradstreet's** shows how widespread is the feeling on this point. Many of those whose opinions were quoted had opposed the prohibition of pools from the outset, and had believed that all the safeguards provided by the Interstate Commerce Act against rate-cutting and discrimination would be of little permanent avail if this clause were retained in the act. But there were others who were willing to see the experiment tried, and who have now become convinced of its failure. This change of sentiment among lawyers and financiers is highly significant; but for the present there is not much reason to expect any tangible results from it. A movement to repeal the clause against pooling will be opposed by two distinct bodies of men, either of them alone perhaps strong enough to defeat it. In the first place, there are those who supported the Interstate Commerce Law out of hostility to corporations as such. To these men, any reduction in rates is welcome. If it hurts the financial prosperity of railroads, they like it all the better, be-

* December 1, 1888.

cause it indicates that they have accomplished their object. Only when the loss becomes so great as to check railroad building and interfere with the development of shippers' facilities can we expect any change of sentiment from this quarter. In the second place, there is a class of men who admit the existence of the present evils, but deny that they are a direct result of the Interstate Commerce Law. They claim that it is the railroad managers' own fault that things have taken their present course, and insist that it is the railroad stockholders and not Congress or the law that are to blame for the present crisis.

This is the position taken by the Interstate Commerce Commission in their second annual report. They admit the existence of the evils which we describe, and deplore them most seriously. They say explicitly that unreasonably low rates are a disadvantage to the community. Any benefit from such rates is but temporary, and falls, for the most part, into the hands of speculators. To legitimate business, steadiness of rates is of the highest importance, and unreasonably low rates cannot be steadily maintained. If they last for any length of time, they are inconsistent with efficient service. If they are established on a large scale, they enable railroad managers to make money by stock-jobbing at the expense of the legitimate investor.* But the commissioners hold at the same time that these results cannot properly be charged to the operation of the Interstate Commerce Act. They believe that the prohibitions of the act in their direct effects have tended to benefit the revenues of the carriers and not to deplete them, making all traffic more generally and more evenly remunerative. They say that the severe losses of the railroads during the past year have not been due to the act to regulate commerce, but to special causes, like the Chicago, Burlington & Quincy strike, which for months was a seriously disturbing factor in the transportation of the whole region affected. They further say that the con-

* Second Annual Report, pp. 20-23.

struction of new lines of road and the sharply competitive rate wars are still more directly responsible for the present crisis, and that these cannot with any justice be claimed to have resulted from the act or from its administration.*

The first of these points, with regard to the direct effect of the act on rates, is at least partially true. The average charge per ton per mile in 1886 was 1.042 cents; in 1887 it was 1.063 cents. Inasmuch as this change was accompanied by an increase in the volume of traffic, it resulted in an increase of revenue; but we must not overlook the fact that it was accompanied by an increase in expense per train-mile at the same time. Though the volume of traffic was greater, the average distance carried was somewhat shorter. The proportion of local traffic, which is more expensive to handle, was, so far as we can judge from the incomplete returns at hand, distinctly larger. While the traffic may have been more "evenly" remunerative, it is doubtful whether it was more "generally" so. The fact already noted, that operating expenses have increased faster than gross earnings, creates a strong presumption that the benefit was not so great as the Commission assumes.

The Chicago, Burlington & Quincy strike was a serious element of loss, but it does not deserve the importance which the Commission assigns to it. The fall in value of the Burlington securities was great; but it was not very much greater than that of some other companies similarly situated, and it forms but an inconsiderable fraction of the whole loss of the railroads of the country. There is apt to be a serious fallacy in treating a strike of this kind as an independent cause of depression. It is much more commonly a result of such depression rather than a cause. The serious railroad strikes have occurred after trouble has begun rather than before it. They are due to an inability of the companies to meet the demands

* Second Annual Report, pp. 17, 18.

of their workmen without serious loss, and for this inability the cause must be sought in the operation of more general conditions.

These conditions may fairly enough be described as the Commission describes them,—parallel railroad construction and wars of rates. But, when the Commission goes on to say that they cannot with any justice be claimed to have resulted from the act or from its administration, they make an unwarranted assertion.* It was understood and expected in advance by the great majority of those who studied the act, whether advocates or opponents, that the prohibition of pools would have some such result as this. It is a universal experience, not of America alone, but of all countries with complicated railroad systems, that only by pooling contracts can stable arrangements between competing systems be maintained. If it had been possible for the railroads to maintain traffic agreements without pools, Mr. Reagan and his supporters would not have been so strenuous in supporting this section. They wanted rates reduced, and they got what they wanted. Railroad men said all along that such a result would be inevitable. The facts have proved that they were right. All the arguments of the Commission as to what railroad managers might do and ought to do are mere expressions of opinion, unsupported by a single historical instance where they have been carried out in

*The following paragraphs were written prior to the recent utterances of Judge Cooley and Mr. Adams on the subject of railroad morals. While recognizing the force of many things which they say, the writer sees no reason to modify his statements. Railroad morals to-day are bad; but why? Not because railroad agents are generally dishonest, but because the law prohibits the most practicable check upon the dishonest ones. That they are unprecedentedly bad, as Mr. Adams claims, we do not believe; for there were worse abuses before pooling began than any which he has to-day cited. Still less can we admit Judge Cooley's reported statement that the result is surprising. Prohibit pools, and it is natural to expect a recurrence of the evils which pools kept in check. The only surprising thing is that they were so long in making themselves felt. The present state of affairs was predicted without reserve in the *Railroad Gazette* of Jan. 14, 1887.

practice. The Commission complains because subordinates on one railroad system are allowed to meet a cut rate on another system. A road which did not allow such discretion would lose a large part of its competitive traffic. The Commission complains, with somewhat more justice, that one road will reduce rates on the mere suspicion of unfair practices on the part of another. But, if traffic is actually diverted, it becomes almost a business necessity to protect one's own interest even without positive proof of the existence of rebates on the other line. For this proof can only be obtained after long waiting, while immediate action is demanded in self-defence. All through this part of the report, the Commission fails to grasp the fact that it involves more serious loss to let competitive business go than to carry it at unreasonably low rates; and that the actual diversion of business must often be accepted by a railroad company as an indication that the agents of the other line are granting special reductions, even without convincing proof of the fact.

Somewhat the same reasoning holds with regard to the construction of parallel lines. If railroads are liable to sharp competitive warfare at any moment, it is a necessity for each railroad to control its own feeders. Even if such lines are more effective in injuring its rivals than for any other purpose, there is a strong temptation to build them. Just so far as the prohibition of pools increases the liability to a state of war, it also increases the inducement to build parallel railroads where they are not needed by the business of the country.

But it may be said that the prohibition of pools ought not to involve the necessity of warfare. It would not, if all the railroad managers and their subordinate agents were on a higher moral plane than nine-tenths of the rest of the community. A large part of the reasoning of the Commission assumes that it might fairly be expected that they should be. This assumption, however complimentary

to the standard of our railroad service, is considerably in advance of the facts. As long as it is only true of some railroad officials and not of all, railroad wars will be almost inevitable under the existing law. The prohibition of pools enables the most reckless among several companies to set the standard for the whole competitive business, and the short-haul clause simply makes this result more destructive financially by forcing the same standard upon the non-competitive business also. To preach peace to the good railroad officials when the bad railroad officials will get the whole competitive traffic on such terms is like insisting on the disarmament of one or two countries in Europe, while others maintain their existing preparations for war. We may go one step farther in the analogy, and say that to preach peace measures to the railroads and to prohibit pools by law, is like urging disarmament in Europe and at the same time removing all the sanction for existing treaties and all the police regulations by which it has become possible to enforce them. Such a project would not mean peace. It would mean war on such terms as to secure the survival of the unfittest.

But, however much we may disagree with the ground taken by the Interstate Commerce Commission, we cannot overlook the fact that their views represent the opinion of a large part even of the more enlightened section of the community, and that it is hopeless to expect any essential modification of the act until the Commission has come to recognize the necessity. Accepting the fact that the prohibition of pools is likely to continue, it is worth while to inquire what will be the probable results in the immediate future.

1. It is possible that there may be an organized effort to evade the prohibition. The recent attempt to establish a clearing house in the South-west may be regarded as a symptom of this tendency. It is a symptom rather than

an actual instance; for it was not successfully carried out, and, if it had been, it would not have been equivalent to a pool. A clearing house simply furnishes a new and better means of detecting violations of a rate agreement, while a pool is a means of removing suspicion by rendering such violations of the rate agreement unprofitable to the road which practises them. No matter how good the detective system of the clearing house, it will not be able wholly to reach the results obtained by a pool. It will make the granting of rebates more difficult and more secret, and thus far less profitable; but it will not remove the suspicion of bad faith when traffic is diverted from one road to another. As long as the combinations of shippers have the power to divert traffic on a large scale, it will be possible for them to arouse this suspicion. To allow combinations of shippers to deal with isolated roads individually and then expect the roads themselves to maintain rates is likely to prove a mistake, however well their clearing house may be organized.

There is a chance that pools may be formed even under the present law without technical violation of its provisions. An agreement among several roads that a clearing house shall make insufficient allowance for expenses on the freight of any road which receives an increased percentage of traffic without showing special cause therefor, has most of the effects of a pool. Without actually dividing or diverting traffic, it makes it an object for the road which obtains an increased percentage to stiffen its rates, and thus indirectly to induce shippers to seek other routes. This was in substance the policy pursued by the Southern association at one period of its history. Whether it were held to be illegal would largely depend upon the discretion of the courts. They would not enforce such an agreement; but they might not hold that it was subject to the special prohibitions and penalties of the Interstate Commerce Act.

Should this attempt be unsuccessful, actual consolidation

is always possible. It is not unlikely that the Interstate Commerce Act, if it should continue in operation in its present form for a long time, would cause direct consolidation of competing interests where otherwise a pool would be sufficient. Whether this result is to be regarded as desirable depends partly on the *personnel* of the resulting management and partly on the point of view of the critic.

2. But there is another possible outcome of the whole matter, which is worth considering. If the railroads should fail to make effective combinations within any reasonable time, and if the present fall in prices should continue, a reduction of new railroad construction must inevitably follow. This was the case in 1874 and 1875. It was this which produced the effective reaction against the Granger legislation. The men who cared least for investors' rights were those who cared most for shippers' facilities. As soon as forced reductions in rates, whether directly established by law or indirectly produced by competition, reach a point where they check the development of the community, a reaction is sure to follow. If this should come, it might readily carry with it, not merely the repeal of the section against pooling, but of other more vital parts of the Interstate Commerce Act. This contingency is prominently in the mind of so careful a student of the railroad problem as Mr. Sterne, when he says that he now advocates the repeal of the pooling clause lest, in the attempt to maintain it, the whole fabric of the Interstate Commerce Law be injured.

It is too early to predict which of these directions events are likely to take. Much will depend upon conditions which are at present unknown. Should the harvests of 1889 prove abundant and general business at the same time be prosperous, the fall in railroad values might be so far arrested as to give the railroads time for organization before matters reach a crisis. In that case, we may hope

for a gradual development of railroad service in such a manner as to adapt itself to the existing law. But if the harvests should prove deficient or manufactures unprosperous, or if there should be anything like a crisis in the money market, a further depression in railroad business is inevitable; and any added depreciation, coming at the present juncture, would almost certainly produce a reaction against national control not unlike that which swept away or reduced to abeyance the state laws in the Upper Mississippi Valley thirteen years ago.

ARTHUR T. HADLEY.

THE FUNDAMENTAL IDEA OF CAPITAL.

It requires but little study to make evident that the term "capital" is used in a variety of ways, each of which is necessary to develop some line of economic thought worthy of attention. Almost every writer on economic subjects uses the word "capital" in a new sense, or at least gives it a definition differing from all others. So varied a use of the term cannot but make the whole subject ambiguous and perplexing. Any proposition concerning capital is true only when capital is defined in a particular way. Great confusion is caused by authors not perceiving that in different propositions they have used the term in different ways. It is not the purpose of this article to magnify the importance of the use of the term in the sense in which I shall use it, nor to belittle other discussions where it is used in other senses. It is, however, to be hoped that this discussion will tend to make writers more conscious of the many ways in which it is now used, and help to establish a more definite usage of the term. Some usage ought to be accepted as fundamental; and, when it is used in any other way, some other word should be used, or at least some modifying word should be introduced. This is especially true of the widely different ways in which the word is used in production and distribution. It is so easy to confuse one usage with the other that no escape from the present confusion seems possible without some addition to or modification of the vocabulary of economic words. We really need new words more than we do new thoughts.

No intelligent discussion can be carried on unless the fundamental idea of capital is first grasped; and, when any modification is introduced pending the discussion of

particular problems, care must be taken that propositions founded on different definitions are not combined to make further deductions.

What, then, is the fundamental idea of capital?

There are three ways in which labor may co-operate to increase the productiveness of industry.

In the first place, by combination. Two men working together in many simple operations can do more than three or even a larger number of laborers, if each should work by himself. This is the case in the felling of trees, the lifting of heavy weights, the moving of large boats, and in innumerable other instances of the same kind.

Secondly, there is the division of labor. More will be produced if some laborers devote their entire attention to producing one article, obtaining whatever else they want by exchanging their produce for that of others. Thus more is produced when some are farmers, others tailors, weavers, blacksmiths, and the like, than if each one endeavored to supply his wants by producing everything for himself.

Thirdly, there is the order in which the labor is performed. One hundred days' work done successively will produce, in many cases, a greater quantity than if all the work is done on the same day. There being a need of a given amount of food, it can be obtained with less expenditure of labor if the labor is mostly performed several months before the supply becomes necessary than if nothing is done until the day is at hand on which there is a demand for the food. If the labor is delayed until the time arrives, the only remaining resources for acquiring nourishment are hunting, fishing, berrying, and the like; and of these the supply is very limited, and much work is required to obtain a supply from these resources, if any considerable quantity is desired. On the other hand, if land is ploughed, prepared, and sowed to wheat several months before there is a scarcity of food, a much larger

amount of food is produced and at a much less expenditure of labor. Again, a supply of cloth being essential, a much larger quantity can be obtained for the same labor if, previous to the time when it is required, a part of the labor has been employed to prepare machines on which the cloth can be woven.

The production of wheat offers a good example for showing how the use of capital causes the exertion of labor in a series involving time, and how the series becomes longer as a more extensive use is made of capital. Doubtless, the first consumers of wheat found it growing wild. They gathered and used it as they did fruits and berries. In this case there was no use made of capital, the consumption immediately following the labor of gathering the wheat. Soon they found that wheat could be easily preserved and consumed when the other fruits, which cannot be preserved for any length of time, could not be obtained. Now the use of capital began as there was an interval of time between the act of gathering and the time of consumption, and during this interval some labor must be continually exerted to preserve the wheat from decay or prevent its loss by theft. At length, when wheat growing wild would not supply the wants of all desiring it, the discovery was made that by cultivation the supply could be greatly increased. The series of acts necessary to produce wheat thus became lengthened out several months, while the need of protecting the crops by fences added a much longer period to the time by which the first and the last acts of production were separated from one another. Subsequently, the desire to exchange other commodities for wheat produced at a distance caused the use of wagons, ships, and railroads, and for their construction the series of acts necessary to obtain the wheat was again extended. In these and many other ways, such as the draining of the land, the use of tools, and the grinding of the wheat, the interval of time between the first act

of the production of wheat and its final consumption has been gradually lengthened by the use of more complicated processes of production; and, during this interval, labor must be constantly exerted, or there will be a diminution of the quantity of wheat which the last acts of production bring the consumers. On all sides can be seen illustrations of like character, showing how the series of acts necessary for production has gradually been lengthened by improved industrial processes; and I now wish to point out what deductions can be drawn from these facts.

There is a radical difference between this method of co-operation and the others mentioned. By the other methods labor is economized, but the supply of commodities is not enlarged; while by this method the supply is vastly increased. If a large number of persons hunt together, they can kill more game, but they do not increase the supply of game. So, too, if several co-operate to cut down and saw trees, they save labor, but do not increase the supply of wood. In the same way it may be shown that the two first-mentioned modes of co-operation do not enlarge the quantity of food or other raw materials, only causing the present supply to be more economically used and labor spared. When food is produced by the cultivation of land, the supply is greatly increased, and a much larger population can be supported than before: their average condition also will be much better, there being not only a greater population, but it is supplied with food with much less labor.

The reward of each laborer must vary in proportion to the length of time which must elapse between the performance of the labor and the time at which the commodity is ready for consumption. If a hundred successive days' labor is necessary to prepare a commodity for consumption, the one who does the first day's work must have more than he who performs the last day's work; for, if they shared alike, each one would desire to do the

last day's work, and no one would perform the first day's work. The difference between the shares which the laborer performing the first day's work receives and he who performs the last day's work is the reward for abstinence. This reward will be greater or smaller according as more or less inducement must be offered to obtain some one willing to defer his consumption until the commodity being produced is ready for use. The amount which the last laborer receives for his day's work is his wages, for he did not defer his consumption. Each one of the other laborers will receive more than the last laborer in proportion to the length of time which must elapse before the commodity is ready for consumption; and this reward for abstinence is called interest. Any of the laborers can sell his right to future consumption and get the present worth of his right, which will always be equal to the amount received by the one doing the last day's work. Hence, the wages of the laborers will be equal if each disposes of his right as soon as the work is performed.

The idea of capital does not necessarily imply a previously accumulated stock of produce for the support of the laborers. This point has been so much insisted upon as something essential to the idea of capital that it is necessary to show exactly in what this opinion is erroneous. The commonly accepted view can be best illustrated by using the production of food as an example. This is usually taken, because it shows the accepted view in the clearest light. The crops are sown in the spring, it is said, and many months elapse before the harvest; and, if the laborers were not maintained in the mean time from the produce of past labor, they would necessarily perish.

I do not deny the fact that they must, in this case, be supported from a previous accumulated stock, but I do assert that this fact has no connection with the idea of capital. To illustrate my meaning, let us suppose that

nature was somewhat different; that, instead of all the crops necessarily being sown in the spring, they could be sown at any time, and would mature at the end of a year; and that farmers, instead of sowing all at one time, sowed each month one-twelfth of what was needed for the year. In this case, they would reap enough every month to support themselves that month, and sow a like quantity in the same place to support themselves the same month the next year. They would now need no previously accumulated stock of food to support them until their crop ripened; yet, in the latter instance, capital has been used just as much as in the former. If the return for labor is uncertain, or the work can only be done at particular times, then a previously accumulated stock is necessary; but, where the produce comes in regularly, there is no need of such a stock. Agriculture is almost the only instance which we now have where a previously accumulated stock is necessary. In manufactories everywhere, the work goes on regularly; and each day sees completed a new supply sufficient for the wants of the community. Wherever a stock of manufactured goods is kept, it is not to assist production, but to enable consumers to have a large assortment to choose from. It is the convenience of the consumers, and not the needs of production, that causes such stocks to be kept.

That in a society where all the produce comes in regularly, and no previously accumulated stock is needed, capital is necessary, and just as much so as in a society existing in our time, where the supply of food comes in irregularly, can be well illustrated in the following manner: The commodities which are produced are divided into two classes, which I, for sake of distinguishing them, will call products and produce. Commodities are produce which will directly satisfy a want of man, and are desired by men on their own account. For instance, we all desire bread and meat because they satisfy our

hunger. We want clothes to keep us warm, houses to protect us from the weather, music, books, and paintings to amuse and instruct us. All these and many other things of like nature we desire because they directly enable us to be happy and contented. Besides these there are many products which no one wants because they can directly satisfy his desires, but because, with their aid, he can produce more abundantly those things which he wants. No one wants a plough, a spade, an engine, or a loom for any pleasure that he can get out of them at the present time, but because by their use he can have at a future time a better supply of food, clothes, books, and other produce than if he did not have them. Tools, machinery, and other instruments of production in the possession of individuals or communities are merely means for the attainment of their ends, and are not things desired on their own account, and hence, from the stand-point of the consumer, are unfinished produce or products; while those things like food and clothes are finished produce. A plough is so many loaves of bread partly made, while a loom and the engine which moves it are partly made coats; that is, society, having determined to make some more bread and coats, is so far along in the work that it has made a plough, a loom, and an engine to propel it.

This view can be still more generally represented in the following way: All labor is employed in putting objects in motion; and, by these motions, we effect what we desire. When we wish a coat or some bread, some of our laborers begin a series of motions, then others take their places and continue the series of motions, and these are followed by still others; and, finally, after many sets of laborers have followed one another, all keeping up the series of motions, the coat, bread, or other desired article appears, and our desires are satisfied.

In all this, we have a series of successive motions — or, in other words, days' labor — exerted to produce a de-

sired commodity ; and, wherever this is the case, the idea of capital is involved. At the end of each day's labor, we have a given amount of produce or commodities capable of directly satisfying some desire, and a certain number of products to which still more labor must be added before they will of themselves be desirable. Those laborers who have been employed on products must, by exchange, obtain the food, shelter, clothes, and other desired produce. The question now arises, What will be the ratio at which products will exchange with the produce? or, in other words, How will ploughs and machines exchange with food and clothes? The reply must be that products will not exchange on equal terms with produce ; that is, a given number of days' work in ploughs and machinery will not exchange for the same number of days' work in food and clothes. Whoever takes the ploughs must wait a long time before his ploughs become food ; and no one will exchange a given quantity of food for the same quantity at a future time, at least not while human nature retains its present characteristics. Ploughs and other products must therefore exchange for a less quantity of food and other produce, measured in the number of days' work required to produce them, and enough less so that some one will consent to exchange food, clothes, etc., for them.

There are two stand-points from which we can view production in which the use of capital is involved. We can suppose the laborers agreeing before the labor begins as to how the produce will be divided. In that case, the agreement must be that he who does the first day's work must receive more than he who does the last, and the other laborers must receive more than the last laborer, in proportion as a greater length of time must elapse from the time they work to that in which the product is completed. We may also consider, as is usually the case, that each laborer or set of laborers does his or their part, and then they

exchange products to obtain what they desire. In this case, products like ploughs and engines will not exchange in proportion to the quantity of work required to produce them with food, clothes, and other produce. These two views are the same, only the point of observation is changed. To say that a laborer will not do the first day's work unless he has more of the final produce than he who does the last day's work is the same in substance as to say that the product of the man doing the first day's work, at that time, will not exchange for a full day's work in food or clothes. Whichever stand-point we take will give us a clear view of what is involved in the idea of capital. This idea, however, must be kept distinct from an accumulated stock, the necessity of which arises from other causes.

The commonly accepted view of capital and its errors may be well illustrated as follows. Suppose, in a community living on fish obtained by hook and line, some one conceives the idea of building a boat to aid them in fishing, and, wanting another laborer to help him make it, offers him four fishes to stay at home and assist in making the boat. The man says that he must see the fishes before he goes to work, for he will be hungry at night; and, if there is no stock of fishes on hand, he will suffer. The employer shows him the stock of four fishes, and the man remains at home and helps make the boat. Having completed the boat that day, they exchange it for fish with some of the fishers, thus replenishing the employer's stock. This labor of making boats is continued from day to day; and each night a boat is finished and exchanged for fish. Soon the laborer finds that his master receives fresh fish each night, and, preferring them to those received the night before, which are no longer very fresh, willingly takes those last received instead of those caught the day before. When this happens, the master can eat up or throw away his accumulated stock, and still production go on as before. It is true, when they begin to work, they

have no stock of food; but by the time they need it the fishermen come home with a stock, and they have made a boat which they can exchange for food.

There is a cause greatly increasing the accumulated stock of produce which nations in our present state of civilization must possess for productive purposes. Most of the laborers do not save for themselves, thus necessitating a class of capitalists who accumulate wealth, not only for their own use, but also for others who prefer immediate enjoyment and a diminished return for their labor to the increased return obtained by deferred consumption.

The motive which induces a man saving for himself to labor to-day for the needs of the morrow, instead of waiting till to-morrow, is of a different nature from that which prompts his neighbor who is not willing to save. Whoever saves for himself labors to-day instead of to-morrow, because labor exerted before the product is needed increases the return. If he labors to-day and enjoys himself to-morrow, he will have more leisure and a greater sum of pleasures than if he had his pleasures precede his labor. That he is willing to conform to the demands of natural conditions, and work when his labor is most efficient, does not increase his need of an accumulated stock of produce. He does not defer his consumption of food; for he eats the same amount whether he works to-day or to-morrow. He does not reduce his consumption of food, but he defers the other pleasures which he could have enjoyed if he had not labored. Suppose, for example, the question arises whether he shall visit some of his friends for two weeks this year or remain at home and dig a ditch which will so increase the produce of his farm that he can next year spare three weeks for a visit. The thought of food would not enter his head. The only question would be whether a visit of three weeks next year offers a greater inducement than a visit of two weeks this year; and he decides to wait, because he can in this way increase his means of

enjoyment. Deferred consumption does not necessitate a stock of produce where the producer has other enjoyments than the consumption of material commodities. He may defer his other pleasures; and thus, without increasing his stock, he may enjoy the increased return which Nature gives to those who comply with her conditions. In this manner, all the improvements which augment the return for labor could be made without the use of accumulated stock, except in those cases, like the production of food, where the produce comes irregularly.

For a person who does not save for himself, the motive for working to-day instead of waiting till to-morrow is very different. In his case, the necessity of an accumulated stock of produce arises not so much from his unwillingness to defer his unexclusive pleasures, but because he has no other pleasures than those derived from the consumption of a stock of produce. If he had other pleasures, he could enjoy them without a stock of produce; but whoever wishes to consume a stock of commodities must first have the stock before his pleasures can begin. A supply of food sufficient for many days can be consumed in one day for mere pleasure, or all labor may be deferred till the whole supply is exhausted. In either case, the consumer becomes dependent on some one who has accumulated a stock; and only as a stock is accumulated can such a class of laborers exist in any society subsequent to the original social state where no stock was needed.

These illustrations show that no accumulated stock of produce is needed in a community where each one saves for himself, and where at the same time production is carried on regularly, the produce coming in without interruption. When work begins in the morning, there may not be a single consumable commodity in the town; but each producer relies on the other producers to furnish each his share. There may be no bread, but the bakers are at work; and no meat, but the butchers are killing

and dressing some cattle ; and no coats, but the tailors are making some ; and so, through the whole round, each one is preparing some article, and by night there will be the full supply of consumable articles on hand ready for consumption. Every day this can be repeated, and production go on as before. Still, such a community uses capital ; and it is just as necessary to them as if production were irregular and an accumulated stock of produce was needed, even if they do consume all they produce as soon as it is ready for consumption. Although no one has accumulated a stock, some one has deferred his consumption by working instead of enjoying his unexclusive pleasures ; and his rights are as valid as are the rights of those who have on that day labored. If no one had worked yesterday, the supply of consumable commodities would not be here to-day, at least not in so great a quantity. The workman of yesterday, then, or he to whom he has transferred his rights, must have his claims satisfied as well as the workman of to-day.

It is usually allowed that labor expended on land to improve and render it permanently better fit for tillage is capital. Since Adam Smith, the labor expended to elevate and educate the laborer himself is denied to be capital. But this is without good reason, and important truths are thus overlooked and neglected. Labor expended beforehand on the laborers will increase the produce of industry just as much as the labor expended in making machines or improving the land. There is no reason why one should be called capital and the other not. The idea of capital is not correctly apprehended, unless the term "capital" is applied to everything on which, labor being expended before the produce is wanted, the return will be increased beyond what it would be if the same labor had been exerted contemporaneously. For excluding the acquired abilities of the laborers, the reason is usually assigned that by including them we confuse the problems

of distribution, since the reward of the laborer depends on laws of its own, distinct from that of capital. This is true; but, for the same reason, capital sunk in land should be also excluded, as its reward depends on rent and not on profits. Capital, as the term is used in distribution, is a much more limited term than when used in production; and only confusion can arise when the two uses of the term are not kept distinct.

It is the problem in distribution to determine how the produce of industry, commodities capable in themselves of giving pleasure and satisfying the desires of the consumers, is to be divided among those aiding in production. The question is, Who gets the produce of industry? and not, Who gets the products? If any factor, for instance the capitalists, should continually take its share in tools, machines, and other products, and leave the produce of industry—food, clothing, and the like—to the other factors, the capitalists would be simply working for nothing, the products being constantly turned into produce; and then they would be consumed by other classes. The produce is distributed as rent, wages, and interest; and the capital from which interest is derived has reference only to the commodities consumed in the production of the produce divided. It has been consumed in production, and must be replaced before production can go on.

On the other hand, capital in production must have an entirely different and much broader meaning. The original factors were land and labor; and subsequently capital came to be used, because labor performed before the produce was needed gave a greater return than labor exerted at the time. This labor could be exerted in three different ways, each of which would increase the produce of industry,—in improving the land, in enlarging the productive capacities of the laborers, and in manufacturing products, such as tools, which, in being consumed, assist in production. These three have a common cause. They

are labor exerted beforehand in order to increase the produce, and hence the same term should be applied to them all; and it is only when capital is used in this sense that land, labor, and capital have a distinct meaning in production.

What were the original qualities of any soil is a question of little importance. Labor has added many qualities to the original ones possessed by the best lands formerly in use, and the poor lands have become good through the qualities obtained by the increase of knowledge and the skilful application of labor. These acquired qualities, which have gradually increased the productive capacities of the soil, are as permanent in their effects as are the original ones furnished by nature; and it does not require an extra expenditure of labor to preserve what the labor of the past has done to aid the labor of the present. Each generation finds the land in a better condition than its predecessors found it, and can obtain a greater produce with less proportional labor.

This is not all the labor of the past has done for the present generation. Besides improving the land, it has also added to the productive capacities of the laborers themselves. Those qualities which our ancestors acquired with much labor have been transmitted to us, and our organisms have become so modified that we can perform the acts necessary in civilized life with less labor than our forefathers. The children of a spinner, a merchant, or a farmer inherit the qualities necessary to the successful performance of the labor of their callings; and, when the father retires, the son can do his work with less labor. There is also an increasing stock of free knowledge which descends from one age to another. Without any cost, we acquire much the greater part of the skill and knowledge of our fathers. Children see and hear what is going on around them, and learn how to preserve health, to avoid evils, and also to obtain a large part of the

knowledge necessary for following any trade or profession without the expenditure of labor by any one. Even the labor of teaching reading and writing, or any other acquirement the labor of which must be repeated for every generation, becomes easier to each succeeding age, since children of the educated acquire knowledge more readily than do those of the ignorant.

Nor is it only in the acquired qualities increasing the productive capacity of man that the labor of the past has brought about a better adjustment of man to his environments. The pleasures and wants of the original man were few and simple, since he only desired to have his passions and appetites satisfied. He required only one kind of food, such as flesh, wheat, or rice; and all his pleasures being physical, whose enjoyment excludes the mutual enjoyment of others, he demanded for consumption only those articles of which the soil can produce but small quantities. As soon, however, as the results of education so add to the original qualities possessed by man that he willingly conforms more to the external conditions about him, he obtains from nature more liberal rewards for his efforts, his wants being less exclusive in their enjoyment and more varied in their kind. The more the acquired qualities of man enable him to enjoy all the pleasures that nature offers, the less exertion does nature require for their production. A field devoted alternately to several crops, such as wheat, rye, oats, and grass, will yield a much greater quantity of food than it will when used only for the production of any one kind. At the same time, by a rotation of crops the labor on the land is reduced. A series of crops keeps the soil porous and mellow, while the loss of productive qualities caused by the cultivation of some one crop increases the labor of preparing the soil. By a change of crops, also, weeds and destructive insects are excluded, or the labor of destroying them much reduced, since most of them have some one crop which they accompany, and

cannot survive if this crop is produced only once in a series of years. In these various ways, an ever-increasing proportional return for labor is obtained. The world becomes better fitted for men as men adjust themselves more fully to the conditions of nature.

From the preceding considerations, it will readily be seen that there are two distinct social states which must be kept distinct in thought. In one of these, the factors of production are the original man, the indestructible qualities of the soil, and a stock of perishable commodities. Nature cannot support many people in this state, and to them the law of diminishing returns is doubtless true. It is this state, where capital includes only commodities requiring constant renewal, that economists always have in mind when they seek to establish the now prevalent doctrines of land and population. But in a more highly civilized state the above-mentioned factors of production are no longer the sole causes of the increase of produce. They are supplemented by an ever-increasing stock of labor accumulated both in man and land, differing from a stock of commodities in that it does not perish, but is ever present, not only to reduce the work of man, but also to increase his means of enjoyment.

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NOTES AND MEMORANDA.

VALUABLE material for more thorough study of the Physiocratic writers is being brought to light. In addition to Messrs. Baer's exhaustive edition of Quesnay's works, we shall soon have the Physiocratic correspondence of Charles Frederic, Margrave of Baden. The *Deutsche Literaturzeitung* states that Professor Knies, who is editing the correspondence, expects to publish it in the course of 1889. The publication will embrace not only letters, but various theoretic disquisitions by Mirabeau and Dupont de Nemours. No doubt we shall get further light on Charles Frederic's curious attempts to put the Physiocratic ideas into practice in his dominion.

THE *Journal des Économistes* for November gives the text of the proposed law for a general tax upon incomes presented by M. Peytral, the French Minister of Finance. It is hardly probable that this plan will ever pass into legislation, but it marks a stage in the present struggle for more revenue and for revenue at the cost of the well-to-do classes.

The chief characteristics of the proposition are these: —

It proposes to make the distinction, so often discussed, between temporary or uncertain incomes and those which are fixed, by taxing professional, industrial, and commercial incomes at one-half the rate at which fixed incomes from investments are taxed.

It proposes to tax for the first time the income from *rentes*, which in France has been treated as beyond the reach of the State except by a breach of faith; and it also makes the income tax cumulative with the three per cent. tax laid in 1872 upon certain large classes of personal securities.

It proposes to strike, as far as possible, the sources from which income is derived, instead of collecting from the recipient of the income, following in this respect the English law; but it also proposes to rely upon the system of personal decla-

rations of general income, hitherto supposed to be completely at variance with the French character as well as with the French practice.

The rate proposed is but one-half of one per cent. on professional and business incomes and one per cent. on incomes from property and investments; but, in the mind of the framer of the proposition, the rates now proposed are probably of little consequence in comparison with the establishment of the system in working order as a familiar part of the French administration.

THE English Gold and Silver Commission has divided equally on the subject of bimetallism, as the previously formed opinions of most of the members indicated; and it seems unlikely, therefore, that the investigation will have any practical effect on the general monetary question. It is not improbable, however, that it may hasten the introduction of some substitute for the small circulation now supplied in England by the half-sovereigns. Nearly all of the commissioners, both opponents and friends of the double standard, joined in recommending the issue of ten and twenty shilling notes, payable in silver, and the withdrawal of the small gold, the bad condition of which was noticed in this *Journal* for January, 1887 (p. 225). To such an issue of silver notes, an objection of some weight is made,—that Scotland and Ireland have already in use twenty shilling gold notes, and that confusion and mistake would be likely to arise from the issue of notes for common use similar in denomination, but redeemable in a different metal. The alternative suggestion favored by the *Economist* is the withdrawal of the half-sovereigns, the coinage of more silver of existing denominations, and the introduction of one-pound notes, payable in gold.

The introduction of Bank of England notes smaller than those now in use seems, in fact, to be not far off. The five-pound note, as a part of the working currency, is more and more complained of as ineffective; and it is interesting to observe that its diminished importance is ascribed to the increased efficiency of deposit banking. So great a proportion even of comparatively small payments are now made by

check that the five-pound note has no indispensable function. Below the five-pound line, however, there is an increasing multitude of transactions too minute to be settled by check, which strengthens the demand for a more convenient medium in small denominations.

THE publication of the concluding volume of the ninth edition of the *Encyclopædia Britannica* will doubtless suggest a comparison of the new edition with its predecessor from many points of view; but in no department can a greater change have been made than in the political economy of this vast work. The economic revolution is, in fact, pretty well described by saying that it is from J. R. McCulloch in the eighth edition to J. K. Ingram in the ninth.

The eighth edition brought forward Ricardo's essay on the Funding System and Malthus's article on Population (both given in the supplement of 1824), and the Economists were discussed by the elder Mill; but, after this safe delegation of topics, Mr. McCulloch still held the main part of the field as his own. The articles written by him on Political Economy and Money (including Banking) were treatises; those on Corn Laws, Precious Metals, and Taxation were considerable essays; and when, in addition, he covered Wages and Adam Smith, there was little more to be said. The treatment of the whole subject in that edition was thus in severely conservative hands, and represents the English school in the strictest sense. The younger Mill does not appear among the writers on this subject, and Senior had treated it in the *Encyclopædia Metropolitana* in a way not in close accord with McCulloch's.

Dr. Ingram cleared his way, as it were, by writing for the ninth edition a short biographical notice of his predecessor,—there can hardly be a doubt as to the meaning of the initials "J. K. I.," subscribed to the article on McCulloch,—pronouncing a eulogy which is chiefly remarkable for its great sobriety. He then set the keynote by his own article on Political Economy, which has since been published independently, and has made a deep impression as an exposition from the new school. McCulloch's other treatise was replaced by Professor Bastable's article on Money and Mr. Leonard Courtney's

on Banking; Population as an economic topic nearly disappeared; Taxation and Wages were assigned to Professor Nicholson of Edinburgh, Free Trade to Professor Thorold Rogers, Socialism to Mr. T. Kirkup, and Adam Smith was of necessity treated by Dr. Ingram himself. Historical perspective, no doubt, required that Ricardo's essay on the Sinking Fund should be dropped, and in its place appeared an article on National Debt by Mr. J. Scott Keltie.

The writers in this new list are not distinctly of one school, as were those in the old one. Still, the predominating influence has clearly moved from the extreme right wing, and is now to be found well over upon the left. There would be little risk in predicting a return at least to the centre, when Dr. Ingram's successor makes a new distribution of the topics for fresh discussion in the tenth edition,— say in A.D. 1918.

At the twenty-first annual Trades-union Congress, held at Bradford, England, in September last, there was some discussion of the agitation for an eight-hours working-day, and more particularly of the desirability of securing it by legislation. The Parliamentary Committee had sent out circulars, asking for an expression of opinion on the latter point. The answers to these inquiries came in some cases from individuals, in other cases from unions *en bloc*. Of the answers from individuals, about 17,000 were in favor of legislation for an eight-hours day, and 7,400 were against such legislation. But, of the unions answering, only ten were in favor of an eight-hours bill, and eleven were against it. Moreover, the eleven in the negative had more than twice as many members as the ten in the affirmative. Of five "trades councils," two were for a bill, three were against. It also appeared that only a "very small" proportion of those to whom these inquiries were directed answered at all, which indicates much lack of interest in the whole movement. The Committee recommended that the Congress should either let the matter drop or order another inquiry: the latter course was adopted.

A resolution on land reform was adopted, very like that of the previous year, advocating taxation of ground rents and

nationalization of land; in fact, declaring in terms "that no real and satisfactory settlement can be effected until the whole of the land of the United Kingdom has been restored to the people." This was carried by a vote of sixty-six to five. Another resolution, adopted unanimously, called for "more extended compulsory powers to local authorities to acquire land for small holdings."

A TYPICAL FRENCH FARM.

In the August number of the *Journal de la Société de Statistique de Paris*, M. Adolphe Coste has presented an ingenious statement of the average results of the French agricultural survey of 1882. He has assumed as the type of French agriculture a farm of 100 hectares, throwing aside the market gardens, vineyards, and other properties which are too small to be worked in real independence, and coming at once to a type large enough to represent a self-supporting agriculture,—the *usine rurale*, where corn and meat are produced in competition with the corn and meat of other countries. The class of farms actually in view comprises 437,957 properties, containing 30,641,459 hectares, giving an average of about 70 hectares each; but, for convenience of comparison, M. Coste prefers to take the round number 100, which greatly facilitates the application of his results.

Taking, then, the acreage of the principal products and grouping those which are closely related, he finds that to represent the distribution of French agriculture his typical 100 hectares would have to be allotted as follows:—

	Hectares.		Hectares.
Gardens, yards, buildings	1	Brought forward	56
Wheat	23	Peas and beans	1
Rye	6	Forage	13
Oats	15	Fallow	13
Barley	3		—
Industrial products (sugar beets, coila, flax, hemp, etc.)	2	Cultivated	82
Potatoes	4	Grass lands	15
Root crops	2	Pasture	3
	56		100

In this distribution, M. Coste finds a curious proof of the continued existence of two methods of rotation in almost

equally extensive use. The old three years' rotation would divide 81 hectares as follows:—

Corn . . 27 Oats . . 27 Fallow . . 27

The four years' rotation would divide the same land between,—

Corn, 20½ Roots, 10½ } 20½ Oats, 20½ Forage, 20½
Forage, 10½ }

Or, if the two methods are equally in use, 81 hectares would be allotted to,—

Corn, 23½ Oats, 23½ Roots, 5½ Forage, 15½ Fallow, 13½

The actual allotment appears to correspond closely to this mean, as follows:—

Wheat, with } 25 Oats, with } 24 Roots, } 7 Forage, 13 Fallow, 12
cola, flax, peas and beans, rye, and barley, potatoes, sugar beets,

The returns of live stock, reducing all varieties to standard types, would show the 100 hectares to be provided with animals in number and weight as follows:—

7 working horses,	weighing	3,380 kilog.
6 working cattle,	"	2,743
1 bull,	"	370
22 cows,	"	7,360
14 young animals,	"	1,863
52 sheep,	"	1,664
26 lambs,	"	504
16 swine,	"	1,840
		<hr/>
		19,581 kilog.

This live weight of 196 kilos per hectare is brought forward in order to show how far France is from that good state of cultivation which high authority finds represented by a live weight of 500 kilos per hectare, and as confirming the belief that the rotation with fallows in the third year is still widely practised. The large proportion which working animals bear to the whole of the stock is also remarked upon as in part the result of uneconomical methods, in part of the scattered position of the parcels which often make up a property, and in part of the imperfect railway communication in a large part of rural France.

The persons occupied in working this typical farm and their wages are estimated thus:—

		<i>Wages.</i>
Farmer and his wife		
Laborers, 3 at 325 fr.		975 fr.
Herdsmen, 1		200
Shepherd, 1		200
Fem. servant, 1		235
Day laborers, 4 at 2.23 fr. 125 days		1,110
" 3.11 fr. 125 "		1,555
12 persons		<u>4,365 fr.</u>

The value of the farm and of the capital employed upon it is examined at some length by M. Coste, with the following result:—

Farm property:—			
Arable land,	worth	123,000 fr.	
Grass land and pasture,	"	45,000	
Buildings,	"	26,000	203,000 fr.
Capital employed:—			
Working animals,	worth	6,193 fr.	
Other live stock,	"	9,597	
Machinery, tools, carts, etc.,	"	6,500	
Other furnishing,	"	2,000	
Advances for seed, wages, and board for 8 persons,		4,711	29,000
Total			<u>232,000 fr.</u>

The rent, as calculated from the returns, would be 5,541 francs, or a trifle less than $2\frac{1}{4}$ per cent. of the value of the farm property. The pecuniary results of a year's operations are investigated with great minuteness by the help of the minute statements as to products contained in the official returns; but this part of the inquiry is open to so much question that we shall only present a summary, in which the results for 1885 are compared with those for 1882, contrasting a bad year with a good one, as giving a measure of the difficulties under which French agriculture now labors:—

	1882.		1885.
Receipts for			
Vegetable products	12,573 fr.		10,374 fr.
Animal products	9,845	22,418 fr.	9,705
Expenses for			20,079 fr.
Rent	5,541 fr.		
Wages	4,365		
Board of 8 persons	2,920		
Seed	1,861		
Depreciation and loss . . .	1,389		
Mechanics, etc.	924	17,000	17,000 fr.
Balance		5,418 fr.	3,079 fr.

From this balance is to come the reward for the personal service of the farmer and his wife and the return on the capital employed upon the farm, amounting to 29,000 francs, as stated above.

SAVINGS BANK DIVIDENDS.

The changes in the earning-power of well-invested capital in the last half-century are illustrated in a striking manner by the figures which we present below, from the returns of three of the oldest Massachusetts Savings Banks. The Provident Institution for Savings and the Suffolk Savings Bank, together holding more than \$48,000,000 of deposits, are the two largest and oldest savings institutions in Boston proper. The Lowell Institution for Savings has an especial interest from its position in a manufacturing city. All three may be taken as representing a class of trustees who wish to invest safely and yet profitably for the owners of the funds in their charge, — taking no commercial risks, holding the principal always within easy reach, and giving to depositors the benefit of the soundest judgment and most skilled management attainable.

In the following statement of dividends made to depositors by the Provident Institution and the Suffolk Savings Bank for fifty years, it is to be noted that extra dividends are averaged over the years in which they were earned, and that the dividends have come to the depositor free from taxation in his hands:—

	<i>Provident.</i>	<i>Suffolk.</i>		<i>Provident.</i>	<i>Suffolk.</i>		<i>Provident.</i>	<i>Suffolk.</i>
1839	4.	5.43	1856	8.	7.	1873	6.	5.26
1840	4.	5.43	1857	7.	7.	1874	6.	5.26
1841	4.	5.43	1858	7.	7.	1875	6.	5.26
1842	7.35	5.43	1859	7.	7.	1876	6.	5.26
1843	7.35	5.43	1860	7.	7.	1877	5.	4.75
1844	7.35	5.43	1861	7.	7.	1878	4.	4.
1845	7.35	5.43	1862	8.	7.	1879	4.	4.
1846	7.35	5.43	1863	8.	8.	1880	4.	4.
1847	8.	5.43	1864	8.	8.	1881	3.	4.
1848	8.	7.	1865	8.	8.	1882	3.	4.
1849	8.	7.	1866	8.	8.	1883	3.50	4.
1850	8.	7.	1867	5.60	8.	1884	3.	3.50
1851	8.	7.	1868	6.00	6.50	1885	3.50	3.50
1852	8.	7.	1869	6.00	7.	1886	3.50	3.50
1853	8.	7.	1870	6.00	7.	1887	3.50	3.50
1854	8.	7.	1871	6.00	7.	1888	4.	4.
1855	8.	7.	1872	6.	7.			
Amount of deposits, 1829,			<i>Provident.</i>			<i>Suffolk.</i>		
" " " 1885,			\$2,005,621.00			\$162,642.00		
			27,548,641.00			20,706,262.00		
Average dividend rate, 50 years,			6.245			5.923		
" " " last 20 years,			4.69			4.787		

The Lowell Institution for Savings has published a statement showing the growth of its deposits from 1829 to 1885, when its deposits were \$3,504,392. It gives a table showing the

value of \$100 deposited in 1829, at intervals of five years, from which may be deduced the rates of interest, compounded semi-annually, as follows:—

	<i>Value of \$100.</i>	<i>Rate of interest.</i>
1835	\$140.55	7—
1840	188.82	6
1845	242.72	5
1850	329.51	6—
1855	450.64	6+
1860	618.75	6½
1865	876.46	7
1870	1,224.11	7—
1875	1,671.34	6+
1880	2,089.68	4
1885	2,479.42	4

THE TARIFF LITERATURE OF THE CAMPAIGN.*

The campaign has brought forth, as was to be expected, a considerable crop of books and pamphlets on the question of protection. Of these, the most pretentious is Mr. Thompson's *History of Protective Tariff Laws*, a stout volume of five hundred pages, with large print, heavy paper, decorated binding, and divers prettily colored charts. Its exterior is characteristic of the class to which the book seems to belong,—the memoirs and histories which enterprising publishers contract for with men in public life, and which are expected to sell less on the score of intrinsic merit than by virtue of the author's name and a flurry of interest in the subject. A serious contribution to historical or economic knowledge is not to

* (1) *The History of Protective Tariff Laws*. By R. W. Thompson, ex-Secretary of the Navy. Chicago: R. S. Peale & Co. pp. 526.

(2) *Twenty-two Years of Protection*. By Henry V. Poor. New York: H. V. & H. W. Poor. pp. 222.

(3) *Is Protection a Benefit? A Plea for the Negative*. By Edward Taylor. Chicago: A. C. McClurg & Co. pp. 274.

(4) *The Tariff and its Evils*. By John H. Allen. New York: G. P. Putnam's Sons. [Questions of the Day, No. 53.] pp. 130.

(5) *Relation of the Tariff to Wages*. A Simple Catechism for those who desire to understand this Matter. By David A. Wells. New York: G. P. Putnam's Sons. [Questions of the Day, No. 54.] pp. 45.

(6) *Tariff and Wages*. By George W. Elliott. Buffalo: Moulton, Wenborne & Co. pp. 112.

(7) *The Home Market and the Federal Surplus*. By Carman F. Randolph. New York. pp. 63.

(8) *True or False Finance: The Issue of 1888*. By a Tax-payer. New York: G. P. Putnam's Sons. [Questions of the Day, No. 55.] pp. 41.

(9) *The National Revenue*. A Collection of Papers by American Economists. Edited by Albert Shaw. Chicago: A. C. McClurg & Co. pp. 245.

be looked for in a publication of this sort. Mr. Thompson, indeed, warns the reader in his preface that he means to provide no very unusual information; and his historical matter is derived mainly from the standard histories and occasional dippings into the Congressional debates. There is a curious lack of proportion in the narrative, such as it is. The first tariff act and the debates of 1789 get half a dozen chapters, made up largely of quotations from various statesmen, and the events of 1832-33 get nearly a dozen; yet there is not a word on the history of tariff legislation after 1860. Of investigation of economic history there is no trace. In fact, there is an absence of specific information so marked that it might be supposed to be intentional. The rate of duty on hardly any article in any tariff act could be learned from this history of the tariff. Mr. Thompson's bias is openly, almost naively, for protection; and England's hostile policy, the Cobden Club, the home market, the constitutional question, and other matters not of an historical sort, are given much space in the volume. The charts seem to have been thrown in at a venture, and have nothing to do with the text and little with the general subject.

Not unlike Mr. Thompson's book is Mr. Henry V. Poor's *Twenty-two Years of Protection*, of which the title is a misnomer. Mr. Poor begins with Sir Josiah Child and the colonial system, gives some information (which has a very familiar ring) on Parliamentary regulation of colonial industries, plods on through our tariff history, and finally has only a quarter of his space left for the period since 1865. There is no pretence of original investigation. The temper of the volume may be inferred from the following extract, which introduces the history of tariff legislation during and after the civil war,—or, as Mr. Poor puts it, “the Restoration of the Work of the Fathers.” Mr. Poor tells us that “no sooner did the North, by the election of Mr. Lincoln and the secession of great numbers of Southern members of Congress, become a nation free to act on her own impulses, than her first work was to restore the work of the Fathers,—the Tariff, Banks, Internal Improvements! How grateful to breathe once more the free air of the early Republic; again to invoke the exam-

ple and companionship of Washington, Hamilton, Madison, Monroe," and so on! The latter part of the compilation is devoted chiefly to statistics on railroads, on the production of iron, savings banks, wages, and the like. All the progress of the country in these various matters is ascribed, in good campaign fashion, to the protective tariff. An appendix gives several statistical tables, chiefly on railroads, which are reprinted from the author's *Railroad Manual*, and may be of service for other than tariff discussion to such as have not the *Manual* at hand.

Mr. Taylor's *Is Protection a Benefit?* has a more scholarly tone and a less sketchy and haphazard character than the books just noticed; but, like them, it is a plea, and not an investigation. Mr. Taylor is an uncompromising free trader, can see nothing that is of weight in the arguments of the other side, and, in his eagerness to meet them, does not keep clear of slips and inconsistencies of his own. In some places, he reasons as if duties brought permanent high profits in the protected industries; yet, elsewhere, he says that any excessive profits are likely soon to disappear. The effect of duties on wages is not treated with much depth, and we meet once more with that unsatisfactory attempt to refute the tariff-and-wages argument which rests on the alleged fact that wages are lower in protected than in unprotected industries. The effect of duties on the prices of the protected articles is discussed with reason and temper, yet, after all, with no hint that this line of reasoning is only a statement in another form of the familiar young industries argument. We have, again, too much of that sweeping sort of statement which declares protection to be "robbery," and says that "gravitation governs the material world no more harmoniously than the natural laws of trade govern all exchange." Loose talk of this kind has often stood in the way of general acceptance of liberal principles as to international trade.

It is but fair to add that Mr. Taylor's book contains good brief sketches of tariff history in England and in this country, and shows good acquaintance with the facts of the present situation. Even here, however, we miss thorough discussion of particular duties or particular industries, and meet with

occasional slips; as, for instance, in the assertion that all pig iron made in the United States is raised in price by the full amount of the duty. Mr. Taylor's style is fluent, vigorous, and clear, and his book may be commended for what it sets out to be,—a plea. It is a well-arranged statement of about all the popular arguments that have been advanced on his side of the question.

Mr. Allen, in *The Tariff and its Evils*, discusses the subject in the same temper and from the same point of view as Mr. Taylor, but less completely and, on the whole, less successfully. "The true — the only — function of government," we are told, "when narrowed down, is merely an intelligent dealing with natural conditions." This may be so, or may not. Much depends on what "natural" means; but the principle of international free trade gets little support from such uncertain generalizations. When Mr. Allen comes closer to the subject, his discussion becomes more solid, though still, as to history and facts, rather inconclusive. There are remarks which are just, if not fresh, on the advantages of commerce and the benefits arising from free exchange of the products of a division of labor. But we find once again the familiar comparison of the growth of the United States in the decades 1850–60 and 1870–80, and the attempt to prove that greater prosperity existed during the former period, and was due to lower duties. In all such discussions, the data are insufficient; census returns, though "official," are generally incomplete, and at best are far from telling the whole story; even the most accurate of figures, if we had them, could not tell us what part the tariff played in promoting or retarding progress. Mr. Allen's attempt to contrast the accumulation of wealth in England and in the United States is of the same unsatisfactory sort. The best chapters of his book are concerned with the shipping question, which is given disproportionate space, but is handled with vigor and knowledge.

Among the briefer publications, Mr. Wells's catechism on *The Relation of the Tariff to Wages* sticks close to the facts of the present situation. Reasoning from the natural laws of trade is let alone, and the main stress is laid on the proposition that higher wages in the United States are a result of greater

productiveness of labor. Mr. Wells's wide knowledge of economic history and facts enables him to supply interesting and effective illustrations on this fundamental doctrine. The form of a catechism, with its alternate questions and answers, may be useful for popular discussion, but becomes wearisome after a few pages.

Mr. Elliott, whose *Tariff and Wages* is also in the form of question and answer, seems to feel this difficulty. He begins with a lively conversation between a theoretical son, who is a free trader, and a practical father, in whom we discover our old friend, the theoretical free trader but practical protectionist. The father soon emancipates himself from the trammels of the conversational form, and finds it best to expound his conclusions by dropping into monologue. Mr. Elliott, like Mr. Wells, makes the question of tariff and wages a question of production, and therein undoubtedly is on the right track. Unlike Mr. Wells, he reasons entirely on general principles, uses fictitious illustrations, and makes no attempt to apply his principles to the facts of our time. In temper and in matter, Mr. Elliott rises above most of the advocates of protection. He shows some acquaintance with economic literature, has his say about Cairnes and Walker anent the wages-fund, and at the close digresses into a discussion of profit-sharing, trade-unions, and social subjects generally. Throughout, he is fair-minded and intelligent, yet hardly offers anything of value to the trained economist.

Mr. Randolph's paper on *The Home Market and the Federal Surplus*, a reprint of contributions to the *Political Science Quarterly* and the *New York Evening Post*, is scholarly in tone and reasoning, and applies to some of the current arguments for protective duties the tests of the classic reasoning on international trade. The anonymous pamphlet on *True or False Finance* is, as its full title indicates, a discussion of the issues of 1888, in brief and rather scrappy paragraphs, which might have appeared with effect as newspaper articles, but which seem hardly worth bringing together in more permanent form.

Quite different from any of the preceding is the collection of papers which Mr. Shaw has edited, on *The National Rev-*

enues. The editor, in his introductory remarks, tells us that his plan was to secure papers which should indicate what was the drift of opinion on the present situation among American economists; and he has emphasized the representative character of the collection by giving some account of the contributors, saying an even word of praise for each. The papers vary in character and in value more than the editor's courtesy could permit him to hint. Some are a little in the nature of a confession of faith, like those of Professor Ely and Chancellor Manott; some are on particular points, as Professor Hadley's vigorous and clear-headed essay on steamship subsidies, Professor Adams's able discussion of the surplus, and Professor Bemis's specific plan of tariff reduction; while Professor Folwell and Commissioner Wright contribute essays in general theory, with no attempt at specific application. On the whole, there is perhaps too much of the flavor of the lengthened editorial article,—a defect, if such it be, which resulted inevitably from the limitations of space. But the treatment is, almost without exception, on a good level; and the volume may be commended to that not inconsiderable class of intelligent readers who prefer a series of essays to a continuous and connected discussion. The debating society or village club would find in it excellent material for their purposes. Original contributions to our understanding of principles or even to our knowledge of the present situation, it was not the object of the editor to bring out.

Indeed, the most noteworthy feature in the whole list of publications is the absence of attempts to investigate carefully and without bias the practical working of protective duties. The questions of general theory have been pretty well threshed out. We can hardly look for much addition to our knowledge on this score, and certainly have had none for many years. But the history and present condition of protected and unprotected industries offer a rich field to the investigator, and one in which no great amount of work of substantial value has yet been done. It is surprising, when we consider the attention the public has given to these subjects, how slight has been the amount of thorough and impartial study of our own industrial phenomena.

T.

ANTI-CHINESE LEGISLATION IN AUSTRALASIA.

In 1855, a law was passed in Victoria, designated No. 39, by which the master of any ship carrying any male adult natives of China or its dependencies, or of any islands in the Chinese seas, or any persons born of Chinese parents, had to pay, on arrival at any port in Victoria, 10*l.* for each such person.* If any ship carrying any Chinese, as above defined, arrived at any port in Victoria with a greater proportion of passengers (apparently of any sort) than one to every ten tons of the ship's burden, the owner, charterer, or master was made liable on conviction to a penalty not exceeding 10*l.* for each passenger so carried in excess; also, power was given to the Governor, with the advice of the Executive Council, to levy such a sum from every Chinese, as above defined, as might be necessary for the payment of the officers employed in carrying out the act.¹ By No. 41 of 1857 of Victoria,² every Chinese residing in Victoria had to obtain a license, costing 1*l.*, and to be renewed every two months on payment of 1*l.* No. 80 of 1859³ repealed this provision and also the act of 1855, but re-enacted the latter in substance, with the addition of a 40*l.* entrance-fee for Chinese arriving otherwise than by ship, and substituted a 4*l.* annual residence-fee for the provisions of the act of 1857. By No. 132 of 1862,⁴ the provisions relating to residence-fees were repealed; and residence-fees do not again appear in the anti-Chinese legislation of Australasia.

Acts similar to that of 1855 in Victoria were passed by South Australia in 1857, No. 3,⁴ and by New South Wales in 1861, No. 3,⁵—the latter also providing for an entrance-fee of 10*l.* for Chinese coming in otherwise than by sea, and enacting that no letters of naturalization should be issued to Chinese,—but these were repealed in 1861 and 1867 respectively. In Victoria, entrance-fees were suspended for two years by No.

* See p. 71 of the Parliamentary blue-book printed in July, 1888, entitled *Correspondence relating to Chinese Immigration into the Australasian Colonies, with a Return of Acts passed by the Legislatures of those Colonies and of Canada and British Columbia on the Subject*. All subsequent references are to pages of that book.

¹ p. 71.

² pp. 71, 72.

³ p. 72.

⁴ p. 75.

⁵ p. 77.

170 of 1863,¹ reimposed by No. 200 of 1864,¹ and abolished by No. 259 of 1865.² No. 259 of 1865, or "The Chinese Immigrants' Statute, 1865," enacted, in the place of all previous anti-Chinese legislation, that the Governor in Council should have power to make such rules and regulations as may be deemed necessary for the registration of Chinese (defined as in 1855, except so as to exclude any child of British parents, wherever born), for their removal from whatever place they are in, for protecting them and adjusting their disputes, "and generally for [their] management and good government." Any one wilfully infringing any such rule or regulation was made liable to a penalty not exceeding 5*l*. This act, which is still law in Victoria if not repealed within six months, is the only instance in Australasian anti-Chinese legislation of similar powers being put in the hands of the Governor. Section 12 of this act provides that "no [Chinese] . . . shall be entitled to vote at the election of members for any mining board."

The last anti-Chinese act passed in Victoria is "The Chinese Act, 1881,"³ assented to December 24 of that year. Its principal features are, like those of the original act of 1855, a limitation of the number of Chinese a vessel can carry and an entrance-fee. As most of the other Australasian Colonies passed acts very much like it, I shall give its provisions in some detail. The second section provides that for every Chinaman in excess of the proportion of one to every hundred tons of the ship's burden, brought into any port in Victoria, the owner, master, or charterer of the vessel bringing him shall be liable to a penalty of 100*l*. Section 3 imposes an entrance-fee of 10*l*. to be paid by the master of the vessel for every Chinese before he is permitted to land, the Chinese receiving a certificate of the payment from the officer to whom payment is made, and lays a penalty on the master of 50*l*. plus the entrance-fee for every Chinese landing or escaping from the vessel before such payment, or before the master delivers to the proper officer a list of the Chinese on board according to a provision of the Statute of 1865. Section 4 imposes a penalty of 10*l*., or, in default of payment, imprisonment for twelve months or till the fine is paid, upon any Chinese entering the

¹ p. 72.² pp. 72, 73.³ pp. 72, 75.

colony by sea, or attempting to do so, without payment of the entrance-fee. Sections 5 and 7 exempt British subjects, and crews in the performance of their duties in connection with their vessels, from the operation of the act; and Section 6 exempts Chinese duly accredited to the colony by the government of China, or sent by the English government on any special mission, from having to pay the entrance-fee. Section 8 prevents the evasion of the act by transshipment of Chinese from one vessel to another. Section 9 puts on the defendant in any proceeding under the act the burden of proving that he is exempt from its operation. Sections 11, 12, and 13 enact that no Chinese (notwithstanding they may be rate-payers) shall vote at any municipal or parliamentary election unless they are British subjects, and that their names shall be omitted from the voting-lists unless they are known to the officials to be British subjects or shall be proved to be such.

Acts similar to "The Chinese Act of 1881" of Victoria, of which I have just given an abstract, were passed by the other Australasian Colonies, as follows:—

Queensland, August 20, 1877, No. 8;¹ and March 10, 1884, No. 13;² South Australia, November 18, 1881, No. 213³ (not applicable to the northern territory); New South Wales, December 6, 1881, No. 11;⁴ New Zealand, 1881, No. 47;⁵ Western Australia, July 28, 1886, No. 13;⁶ Tasmania, November 7, 1887, No. 9.⁷ The Chinese question has never become a pressing one in Fiji.*

These acts give a variety of definitions of "Chinese," but practically they are all nearly equivalent to that adopted in New South Wales,⁸—"any person of the Chinese race." The entrance-fee is everywhere fixed at 10*l.*, except in Queensland, where it is 30*l.*⁹ The Statute of 1881 in Queensland provided for the refunding of the entrance-fee on certain conditions,¹⁰ but that provision was repealed in 1884.¹¹ New South Wales¹² and

* p. 33. Sir J. B. Thurston writes from the Government House, Fiji, April 11, 1888, that "there are very few Chinese subjects in this colony, not exceeding, perhaps, thirty in all. They are chiefly occupied as small traders and gardeners. Their conduct is, on the whole, inoffensive, and no exceptional legislation whatever exists affecting them."

¹ p. 80.

² p. 81.

³ p. 76.

⁴ p. 78.

⁵ p. 86.

⁶ p. 84.

⁷ p. 82.

⁸ p. 78.

⁹ p. 82.

¹⁰ p. 81, § 7.

¹¹ p. 81, § 2.

¹² p. 78.

Tasmania,¹ like Victoria, allow only one Chinaman to every one hundred tons of a vessel's burden; West Australia² and Queensland³ allow one to every fifty tons; and the rest, one to every ten tons.⁴ All impose a penalty of not over 200*l.* upon the master if he does not produce a list and, except in Victoria, a brief description of all the Chinese on board.⁴ In all these acts, it is stated that the fine imposed on a Chinaman for entering or attempting to enter without paying his entrance-fee shall be *in addition to* the entrance-fee, except in the case of Victoria.⁵ *Quære* how the Victoria Act is construed in that respect. The acts of Queensland,⁶ New South Wales,⁷ New Zealand,⁸ Western Australia,⁹ and Tasmania,¹⁰ make provision for the seizing of the vessel, on default of the master in allowing illegal landing of Chinese, and for holding her, with power to sell under certain conditions.* In New Zealand and Tasmania, as in Victoria, there is no entrance-fee if the Chinaman comes otherwise than by vessel. In the two former cases, this omission can make no great difference; but it is singular in the case of Victoria, especially when we remember that the Statute of 1859 *supra*, in Victoria, put the fee for such entrance at 40*l.*¹¹

All the colonies have provisions for a summary enforcement of the penalties imposed by these acts,¹² the magistrates before whom the case is brought deciding "upon their own view and judgment"¹³ whether the defendant is a Chinaman or not. All except Victoria give certificates of temporary exemption from the operation of the acts to Chinese leaving the colony

* In Queensland (p. 80), if the master neglects to pay the entrance-fee, or unlawfully lands, or permits to land, any Chinese, "in addition [to a penalty on the master], the vessel shall be forfeited, and may be seized, condemned, and disposed of in like manner as ships forfeited for a breach of any law relating to the customs." So also in Tasmania (p. 83) and New Zealand (p. 87). In New South Wales, it is lawful that any vessel, the master of which is held by the Treasurer of the colony "to have committed an offence or be a defaulter" under the Chinese act, should be detained until the master gives bond with sureties for the payment of any penalty and any other sums found due from him; and, if he does not give bond, nor pay when convicted, the vessel may be seized, and condemned or forfeited as for a breach of the customs laws. Western Australia has similar provisions, but neither Victoria nor South Australia.

¹ p. 82. ² p. 84. ³ pp. 76, 82. ⁴ pp. 73, 76, 78, 80, 82, 84, 86.

⁵ pp. 77, 81, 83, 85, 87. ⁶ p. 80. ⁷ p. 79. ⁸ p. 86. ⁹ pp. 84, 85. ¹⁰ p. 88.

¹¹ p. 72. ¹² pp. 73, 77, 79, 82, 84, 86, 87. ¹³ pp. 73, 77, 79, 81, 83, 85, 87.

for a time specified in the certificate.^c Western Australia exempts from the operation of her anti-Chinese act all laborers under a previously written agreement with their employers,^d — an exemption which compares curiously with our laws against the importation of contract labor. South Australia^e and Tasmania^f make it a condition of the entrance of a Chinaman into their territory that he shall have been vaccinated. The restrictions on the right to vote, which occur in Sections 11, 12, and 13 of the "Chinese Act of 1881," and in Section 10 of the act of 1865, in Victoria, are not found in the other acts I have cited, though there are similar provisions in the anti-Chinese act passed in New Zealand this year.^g It may be that the general laws of the other colonies on the subject of voting provide similar restrictions.^h I have found no other instance of the law of New South Wales of 1861,ⁱ repealed in 1867, that no letters of naturalization shall be issued to Chinese. There was a law in Queensland, in 1877,^j that Asiatic and African aliens should have to pay an "increased fee for Miners' Rights and Business Licenses issued under the Gold Fields Act." This law was repealed in 1878, when it was enacted instead "that Chinese should not be allowed to mine on the Gold Fields until after the expiration of three years from the date of their first proclamation, unless the gold field had been discovered by an Asiatic or African alien."^k There are differences between the acts in the different colonies, in matters of detail and in the amounts of the pecuniary penalties imposed; but I have touched upon all the important points.

In 1888, the anti-Chinese legislation of Australia was made geographically complete by the passage, on March 1, by South Australia, of a bill imposing an entrance-fee of 10*l.* upon all Chinese landing in the northern territory, and a quarantine of twenty-one days upon all vessels arriving in that territory from Chinese ports.^l

The report received last spring of a treaty concluded between the United States and China by which the Chinese were to be kept out of this country increased the anti-Chinese

¹ pp. 77, 79, 81, 83, 85, 87. ² p. 39, No. 72; p. 40, Enclosures 1 and 2; p. 85.

³ p. 83. ⁴ p. 77. ⁵ Cited more fully below. ⁶ p. 34, Enclosure in No. 64.

⁷ p. 77. ⁸ p. 14, Enclosure in No. 22. ⁹ p. 15. ¹⁰ p. 3, No. 5.

feeling in Australasia.¹ The excitement in Sydney ran so high that the authorities overstepped the law² in preventing the landing of the Chinese on board the steamer "Afghan" for fear of a riot.³ In New Zealand and New South Wales, acts were passed (and subsequently assented to)⁴ putting still closer restrictions on Chinese immigration than had formerly existed in those colonies. "The Chinese Immigrants' Amendment Act, 1888," of New Zealand,⁵ lowered the number of Chinamen a vessel could carry to one for every one hundred tons⁶ (instead of ten), repaired some oversights in the act of 1881, and provided that Chinese should not vote at the "election of a member of a local authority."⁶ The New South Wales act of 1888 raised the entrance-fee to 100*l.*, and provided an indemnity for the government in case the Supreme Court should declare the action of the ministers, in not allowing the Chinese on the "Afghan"⁷ to land, to be illegal.⁸ New Zealand also republished proclamations declaring China, Hong Kong, Sumatra, Java, Mauritius,⁹ and the Islands of the Eastern Archipelago, to be "infected places" under "The Public Health Act, 1876,"¹⁰ giving notice¹¹ that strict quarantine would be enforced against all vessels from, or having touched at, any of those places, or having received any person or thing whatsoever from or out of any vessel coming from or having touched at any of those places. The motive for republishing these proclamations was the same as that which caused the act to be passed,¹²— simply to keep out the Chinese.

The most interesting effect of the anti-Chinese excitement was a conference of delegates from all the Australasian Colonies except New Zealand and Fiji, upon the subject of Chinese immigration, held in Sydney on the 11th, 12th, and 13th of last June,¹³ in which the opinion was unanimous "that the

¹ p. 2, No. 3; p. 13, No. 21; p. 11, No. 14 A; p. 21, No. 39 and Enclosure, and No. 37; p. 22, No. 61; p. 42, No. 76 A; p. 52, Enclosure in No. 37; p. 49, No. 37; and other letters and telegrams.

² p. 27, No. 48. ³ p. 26, No. 45. Cf. p. 27, Nos. 46, 47; and cf. also p. 51, No. 37.

⁴ p. 31, No. 58; p. 41, No. 73; p. 30, No. 54. ⁵ p. 53. ⁶ p. 54.

⁷ For short history of the Afghan matter, see p. 46, No. 33, and p. 33, No. 71.

⁸ p. 26, No. 45. ⁹ Since declared clean. ¹⁰ pp. 55, 56. ¹¹ p. 55.

¹² p. 51, No. 37. ¹³ p. 43, No. 78, gives a report of the conference.

desired restriction can be best secured through the diplomatic action of the Imperial Government and by uniform Australasian legislation." There was a unanimous resolve "to consider a joint representation to the Imperial Government for the purpose of obtaining the desired diplomatic action"; but it was found impracticable¹ to adopt the suggestion made by the Imperial Government² that the restriction imposed should be of a general nature, so as not to offend the Chinese and interfere with diplomatic action. The advice given by the Imperial Government that anti-Chinese legislation should be suspended pending the negotiation³ was not followed, the conference, with the exception of Tasmania and Western Australia, being of opinion that the desired uniform Australasian legislation should include a limitation of one Chinese to every five hundred tons of a vessel's burden,⁴ that Chinese should not be allowed to pass from one colony to another without the consent of the latter,⁵ and that the entrance-fee should be abolished.⁶ It was understood that, if the draft bill should be adopted by two other colonies, New South Wales would make its legislation substantially conform to it, all the colonies reserving the right to make variations in matters of detail;⁶ but in the mean time New South Wales kept on, and passed the bill I have mentioned above, on June 15.⁷

On June 22, Lord Salisbury, at the conclusion of a letter⁸ admirably summing up the situation, wrote to Sir J. Walsham, "I have to instruct you to place yourself without delay in communication with the Tsung-li Tamên, and urge upon them . . . that . . . the Chinese Government should adopt a course similar to that which they followed in the case of the United States, and enter into a convention with Her Majesty's Government to the effect indicated in the enclosed Resolutions of the Conference held at Sydney."

JOSEPH LEE.

¹ Cf. p. 41, No. 75. ² p. 35, No. 69. ³ p. 43, No. 77. ⁴ p. 43.

⁵ p. 49. ⁶ p. 45, No. 80. ⁷ p. 45, No. 81. ⁸ p. 49, No. 85.

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APPENDIX.

ITALIAN FINANCES FROM 1860 TO 1884.*

BY ALANSON BIGELOW HOUGHTON.

THE last quarter-century has seen three great nations—the United States, France, and Italy—both suspend and resume specie payments. The conditions under which each of these countries labored at the time of suspension, their history during the term of the forced currency, and finally the means employed by each to gain a sound financial footing once again, are, from the economic stand-point, of almost equal importance. Yet, while the cases of the two former have been carefully studied and presented, that of Italy has been left by English and American writers practically untouched. The present article is an endeavor to lay before the reader a brief sketch of Italy's financial development since the beginning of the new kingdom, laying special stress on the suspension of specie payments in 1866 and on the resumption seventeen years later, in 1883. It falls naturally into two parts. In the first, after a brief examination of the economic conditions under which the new kingdom of Italy began its existence, an effort is made to present Italy's situation at the time of suspension and to discover in how far, broadly speaking, a forced paper was a necessity. In the second part, a review is first made of Italy's progress from 1866 to 1880;

*The present article was written, for the most part, as a study in Political Economy in Harvard University, during the second half of 1883-1884, and was completed abroad. The writer wishes here to acknowledge his great indebtedness to Professor Dunbar for assistance in its preparation.—A. B. H.

COMING, December 10, 1883.

and this is followed by a setting forth of the various measures and means by which, in 1883, the resumption was finally accomplished.

I.

a. DOWN TO 1866.

The kingdom of Italy, covering the whole peninsula except that part under the temporal dominion of the pope and the provinces held by Austria, was proclaimed by law on March 17, 1861. The financial unification, however, was not accomplished until later, when various laws—among them that of August 14, 1862, establishing a Court of Accounts, and that of August 24, 1862, providing for a single monetary system—finally brought the finances into manageable form.

The general condition of Italy at the time of her political consolidation was backward. Her national economic life did not really begin until after 1861; and not until the occupation of Rome in 1870 did political affairs fall finally into the background. Under the administration of the little autocratic governments, agriculture had flourished in a way, but this was all. During the first half of the century, commerce was little more than local. Tolls and duties surrounded each of the many provinces, and served effectually to check any growing commercial activity. The means of communication between the different States, and even within them, were scanty and bad. Lack of confidence in the stability of the governments or of the laws discouraged all commercial undertakings and even the spirit of industrial enterprise seemed wanting. Trade was looked upon as something more or less odious, especially in Southern Italy, where commerce was practically a closed way to the middle classes; and this had its natural effect in crowding the already overcrowded ranks of the "learned" professions.

Later, when the spirit of modern enterprise began to force its way into Italy, its progress was very slow. At the date of the union, not a single State, if we except Piedmont, had made any preparation to meet the changes which the industrial revolution in Europe and America had brought about. Piedmont, it is true, had looked to the future and paid some heed

to the changes going on around her; but, on the other hand, her financial condition was by far the worst among the Italian States. The others had merely drifted along. Their budgets* were necessarily kept within very moderate limits by their small receipts and the undeveloped condition of credit. In 1860, the total savings† in the savings banks amounted to but 157 mil. In all Italy, only four banks‡ had the power of emitting notes payable at sight to the bearer,—one at Turin, one in Florence, another in Parma, and a fourth in Bologna. Naples and Sicily, indeed, had each a note-issuing bank; but these, like the old Bank of Hamburg, merely issued receipts of deposit, which passed from hand to hand when indorsed. As for manufacturing industries, the few that existed were small and badly organized; and capital was shy of embarking in them.

The unification, however, began a new era.§ A general tariff was laid, the vexatious tolls between the different States were abolished, numerous inequalities of taxation and restrictions upon trade were done away with, and a much needed system of internal improvements was entered upon. But every kind of difficulty|| lay in the way, and the work had to go on slowly. The sources of revenue differed in most of the provinces; and, where any were common to all, they were based on different proportions in each. The ground tax,¶ for instance, varied between a minimum of 9 centimes per lira of taxable revenue in Tuscany and a maximum of 19.75 centimes in the Lombard provinces.** Even the multiplicity of systems of money continued, long after their legal abolition, to produce some degree of confusion.

In addition to these difficulties of organization, the new

* *Journal des Économistes*, March, 1864, p. 264. It is curious to remark, so accustomed had the Italians grown to these small expenditures and receipts, that a feeling of surprise and indignation was aroused when, after the unification, it was found that bringing the seven budgets together into one did not decrease the expenditures, but that, on the contrary, a great State had burdens which a smaller one escaped. See also H. v. Treitschke's *Historische und Politische Aufskizze*, Leipzig, 1886, vol. II. p. 387.

† *Annuario Statistico Italiano*, 1878, Parte II., p. 108.

‡ Cf. C. Baer's *La Question des Banques*, Turin, 1864, pp. 76, 77.

§ *Annuario*, 1862, p. 7.

|| *Ibid.*, p. 8 et seq.

¶ *Ibid.*, p. 20.

** Compare Sachs, *L'Italie*, and Parieu, *Traité des Impôts*, I. pp. 207-209.

kingdom was at once plunged up to its ears in debt. This debt was of two kinds. In the first place, the government had to assume all the debts of its predecessors, taking upon itself the sum total of the obligations which had been contracted by the several parts of the peninsula up to the time of their annexation. This assumption was a fruitful source of trouble, since there was great disparity in the comparative weight of the debts of the different provinces. But by a law* of the 18th of June, 1861, promulgated August 4, this debt† was assumed and unified, creating, when enrolled in the Great Book of the Debt,‡ a total of 111.6 mil. of *rentes*, representing a nominal capital of 2,241 mil. lire. In the second place, a still heavier burden had to be assumed in the establishment of primary schools, in the construction of means of communication,—such as roads, bridges, railroads, telegraphs,—and of certain public works, and in the securing of other necessary instruments of modern civilization. Throughout the entire southern part of Italy, in the papal regions, and in a considerable part of the north, the means of communication were extremely limited. A system of railroads bound together Venice, Milan, Turin, and Bologna, and there were three short lines to the south between Florence and Leghorn, between Rome and Civita Vecchia, and between Naples and some neighboring towns; but, in all,§ in 1859, these made a total of only about 2,000 kilometres.

In 1860, each province had its own budget.¶ In 1861, these budgets had been reduced to two,—that of the new kingdom and that of Sicily and Naples. Sicily and the Neapolitan provinces had each a financial bureau, situated in Palermo and in Naples respectively, almost independent of the Minister of Finance. The finances of these two kingdoms were practically under the control of the provisional government; and

* *Bullettino Ufficiale della Ragioneria Generale*, etc., 1863, *Luglio—Dicembre*, pp. 677–699. Cf. V. Ferraris, *Le Leggi sul Debito Pubblico Italiano*, Turin, 1886, pp. 508–532.

† *Annuario*, 1862, p. 28.

‡ *Bullettino Ufficiale*, etc., pp. 669–677.

§ Isidore Sachs, *L'Italie: ses Finances et son Développement Économique*, Paris, 1886, p. 957. Sardinia, 850 kilometres; Tuscany, 257; Lombardy-Venice, 522; Pontifical States, 101; Two Sicilies, 99. Total length, 1,829 kilometres.

¶ *Annuario*, 1862, pp. 9–13.

they formed, in reality, separate financial centres. But in October, 1861, the lieutenancy of Naples was suppressed, and in January, 1862, that of Sicily; and thus the budgets of both Naples and Sicily were incorporated into the general budget for the kingdom for 1862. The year 1862, therefore, marks the formal beginning of the modern financial history of Italy.

The budgets just previous to 1862 show the genesis of the budget for the entire kingdom. Beginning with the year 1860, the preliminary estimate* made the receipts† 547.6 mil., the expenditures 608.5 mil., and a deficit of 60.9 mil. lire. This result, however, was more cheerful than accurate. The complete financial situation‡ on the 31st of December, 1860, was: receipts, 456 mil.; expenditures, 830 mil.; deficit, 374 mil.; and, adding to this deficit the deficits left over from preceding years, which amounted to 43 mil., there was a total deficit of 417 mil. This was covered by an appeal to public credit. The old Piedmontese provinces made two loans, of 100 mil. and of 150 mil.; Emilia made a loan of 10 mil.; Tuscany made an emission of 1.5 mil. in 3 per cent. *rentes*; and new *rentes* were created by Naples and Sicily. In all, this amounted to 377 mil. A further sum of 15 mil. was secured by temporary advances, which brought the total up to 392 mil.; and this sum, applied to the budget, left a deficit for 1860 of only 25 mil.

For the year 1861, as has been said, there were two budgets, — one for the new kingdom and one for Sicily and the Neapolitan provinces. The preliminary estimates,§ taking both together, set the receipts at 477.6 mil., the expenditures 853.7 mil., and the deficit 376.1 mil. The actual deficit, however, proved to be much larger. The final figures|| were: receipts, 374 mil. effective and 94 mil. non-effective, making the total 468 mil.; expenditures, 636 mil. and yet remaining 337 mil.; total, 973 mil. The real deficit, then, was 505 mil. To meet this, recourse was had for the first time to direct borrowing by the new kingdom. A loan of 500 mil. was voted by the

* *Annuario*, 1862, p. 368.

† We shall always include under "receipts" both ordinary and extraordinary receipts, and under "expenditures" both ordinary and extraordinary expenditure.

‡ *Annuario*, 1862, pp. 368, 369.

§ *Ibid.*, p. 372.

|| *Ibid.*

Chambers; and in July, 1861, the emission was made in five per cents. at the rate of 70½, the credit of the new kingdom calling out a far larger subscription than was necessary. Bringing the proceeds of this loan into the budget, together with certain Sicilian and Neapolitan *rentes*,* the receipts from loan and *rentes* in 1861 were 345 mil.; and there still remained due on the same 203 mil., or a total of 548 mil. Deducting from this amount the total deficit for the year, 505 mil., and the 15 mil. of advances secured by the State in the preceding year, a nominal surplus of 28 mil. lire was left.

The reasons for so great a deficiency lay on the surface of affairs. In the early part of the year, Francis II. was still fighting, and did not capitulate at Gaëta until the middle of February. Later, great efforts had to be made to put down the brigand bands in Calabria and the Abruzzi. And, finally, the receipts were diminished because the government, for purposes of conciliation, renounced its claims to certain taxes.

We come now to the formal opening of the budgets for the entire kingdom. Recapitulating and, for convenience, bringing the figures † down to 1866, we have the totals, in millions of lire:—

	<i>Receipts.</i>	<i>Expenditures.</i>	<i>Deficits.</i>
1860	456	830	374
1861	468	973	505
1862	490	937	446
1863	524	906	382
1864	576	944	368
1865	646	916	270
Total,	3,150	5,496	2,345
Average,	525	916	391

The preliminary estimates ‡ for 1862 put the receipts at 531 mil. and the expenditures at 840 mil., and showed a deficit of 309 mil. In March, however, a change of ministers took place. A new budget became necessary, and Sella, the new Minister of Finance, presented the revised estimates § in June. According to his plan, the expenses were raised 127 mil.,

* *Annuario*, 1862, p. 272.

† *Annuario*, 1864, pp. 1054-1068. A convenient summarized statement of the budgets from 1862 to 1882 may here be found. Special reference is made to Sachs's *L'Italia*, etc., pp. 1-276; Cuheval-Clarigny's *Les Finances de l'Italie*, Paris, 1886, pp. 1-182; and R. v. Kaufmann's *Das Budget des Königreichs Italiens*, in *Finanz-Archiv*, iii., 1886.

‡ *Annuario*, 1862, p. 324.

§ *Ibid.*, pp. 317-342.

owing largely to increased military and naval expenditures, while the receipts were but slightly increased, so that, all in all, the minister was forced to add 124 mil. to the deficit of 309 mil. in the former budget, which gave a total deficit of 433 mil. Sella proposed * to meet this as follows: About 50 mil. from taxes and some Sicilian *rentes* were at his disposal, to start with. Certain railroads in course of construction were to be conveyed to private parties, these parties being secured by a guarantee; and a privilege of canal construction was to be ceded to a company which should buy for 20 mil. the existing canals. These measures would bring the deficit to 325 mil., and an emission of 100 mil. of treasury bonds would reduce it still further to 225 mil. This sum could be raised by the sale of those domanial lands which served no public use, and of those church estates which had passed to the domain; only, in return for these latter, a revenue in *rentes*, equal to their yearly income, would have to be given the ecclesiastical bureau, in whose charge they were. Finally, the minister asked to be allowed to sell 100 mil. additional treasury bonds in anticipation of the sale of the domanial lands. These were the leading provisions of the plan, and they were finally adopted. If we add that an actual deficit of about 320 mil. was brought over from 1861, of which we have taken no account, it is evident that the year 1862 left the finances in a state where bankruptcy seemed almost at the door.

Sella was succeeded by Minghetti in December, 1862. Minghetti was the financial optimist of his day; but, in presenting his estimates on the 14th of February, 1863, he was forced to declare that the financial situation dominated everything else, and that even political questions must be subordinated to it. In the estimates † for 1863, the receipts stood at 608 mil. and the expenditures at 962 mil., and a deficit was shown of 354 mil. To this sum, however, must be added, first the interest on a new loan ‡ of 700 mil., which the minister proposed to make, bringing the amount up to 400 mil., and then the

* *Annuario*, 1862, pp. 330-342.

† *Ibid.*, 1863, pp. 387-417.

‡ *Le Crédit Public en Italie et l'Emprunt de 1863*. Par E. de Choisy. Turin, 1863.

deficits left over from 1862, some 875 mil., the total deficit thus amounting to 775 mil. In spite of this appalling amount, Minghetti was hopeful, and brought forward a scheme for doing away with the deficits entirely after four years. His plan rested on a distinction between the ordinary and extraordinary budgets. The extraordinary deficits were not to be allowed to exceed 100 mil. per year. The ordinary deficits were to be reduced, in 1863 to 220 mil., in 1864 to 165 mil., in 1865 to 110 mil., in 1866 to 65 mil., so that, at the same rate of progress, in 1867 a balance would be obtained. The ground was cleared for this movement by reforms, which cut down the expenses 100 mil. for the year, and raised the taxes so as to increase the receipts 115 mil. If these proposals were accepted, affairs would stand as follows: deficit to January 1, 1863, 875 mil.; deficits from 1863 to 1866, 550 mil.; extraordinary deficits, 400 mil.; or, in all, 1,325 mil. This sum was to be met, first of all, by a loan of 700 mil. Then, by the sale of the domanial lands, a sum of 218 mil. and, from the church estates, 222 mil. more could be raised. The remainder would be secured by increasing the amount of treasury bonds in circulation from 150 mil. to 300 mil. This would give a total of about 1,300 mil., and practically ensure the balance so long sought for. Minghetti's optimism proved contagious, the plan was adopted, and the loan * was decreed. The first emission of 500 mil. at five per cent., at a rate of 71, was made in March; and the second emission of 200 mil., at a little better than 68, followed in December. But the very next year was sufficient to overturn this fairylike creation of Minghetti's brain.

When the budget for 1864 was first presented, it showed a deficit of 255 mil., the estimated receipts being 672 mil. and the expenditures 927 mil. But late in the year political changes brought Sella into office again. In November, he presented his estimates,† and declared that the deficit would come, not to 255 mil., but to 316 mil. The taxes had yielded less than estimated, the loan was not thoroughly successful, the sale of the public lands fell short, and certain items of expense had to be increased. The situation demanded heroic

* *Vide* p. 239.

† *Annuario*, 1865, pp. 413 *et seq.*

treatment, and received it. An issue of 50 mil. in treasury bonds and an estimated sum in the treasury of 66 mil. from taxes and other sources made 116 mil. This left 200 mil. yet wanting. From the sale of the domanial lands, 40 mil. could be expected. An anticipation of the ground tax for 1865, which was fixed at 121 mil., and a further issue of treasury bonds would make up the balance. Taxes were once more increased. The price of tobacco was raised one-third, and the price of salt was increased 10 lire per 100 kilos. The Crown gave up 3 mil. of its dotation.

But all in vain. To try to fill these dreadful deficits seemed like pouring money into a bottomless hole. When the budget* for 1865 was presented, there was another deficit of 208 mil., the receipts being put at 669 mil., and the expenditures at 817 mil. To this, moreover, had to be added from former deficits left over a sum of 317 mil., which gave a total of 525 mil. Sella faced the dismal prospect boldly. He agreed to bring in a budget for 1866 with a deficit not to exceed 100 mil., and adding this 100 mil. to the deficit for the year gave an aggregate of 625 mil. This sum he proposed to meet by a loan of 425 mil., and by the sale of the State railroads, which would yield 200 mil. more. In addition to these measures, certain changes would still further increase the taxes. The proposals were accepted; and the loan of 425 mil. was duly made at a nominal rate of 66, or, deducting expenses, at 63.44, which, considering the circumstances, was gratifyingly high.

This brings us down to the beginning of 1866, when affairs finally reached their climax. How great the strain had been one can hardly overestimate. The tax-yields† tell us something of it. These were in 1861 458 mil., in 1862 471 mil., in 1863 511 mil., in 1864 565 mil., and in 1865 637 mil. This shows an increase of 45 per cent., which, when we consider that Italy was by no means rich, is something enormous. We have seen that the new kingdom began its existence with a nominal debt of 2,300 mil., and an annual interest charge of 112 mil. In the years 1860–65 there had been an aggregate deficit of 2,350 mil., and an average yearly deficit of 391 mil.

* *Annuario*, 1865, pp. 451–462.

† *Annuario Statistico Italiano*, 1878, Parte I., pp. 144, 146.

To cover this, loans yielding nearly 1,700 mil. had been contracted; and these, at the market rate, amounted to 2,500 mil. of nominal debt, with 125 mil. annual interest. It was true that the receipts had steadily grown larger, but this was due almost entirely to the increase of the taxes from year to year. And if, on the other hand, there had been a slight though intermittent fall in the expenditures, yet in 1865, when the deficit touched its minimum, it amounted to some 40 per cent. of the gross receipts. Even this unfavorable showing had been reached only by the most strenuous efforts; for, to say nothing of the increase of the taxes, enormous loans had been contracted, and the domains and the State railroads were being sold.

One further point demands our attention before we pass on to consider the events of 1866. The foreign trade during these years exhibited a considerable loss, and one continually greater year by year. The following table* gives a statement of the special commerce; that is to say, of the amount of goods imported for actual consumption, and the amount of domestic goods exported. The figures are in millions of lire:

	<i>Imports.</i>	<i>Exports.</i>	<i>Difference.</i>
1862	830.0	577.5	252.6
1863	902.3	633.9	268.3
1864	963.8	573.5	410.3
1865	965.2	558.3	406.9
Total,	3,661.2	2,343.2	1,318.2
Average,	920.3	585.8	334.5

We see here an increasing importation and a decreasing exportation. These figures are important as an index of Italy's condition. Italy was now in a position where her budgets exhibited a steady and strong deficit, necessitating continuous borrowing from abroad, and where the foreign trade went directly against her.

The sum† of specie in circulation is supposed to have ranged about 1,000 mil., although, of course, this amount was subject to frequent fluctuations. How, then, were the gold and silver kept from going out of Italy? The answer

* *Annuario Statistico Italiano*, 1876, Parte II., p. 34.

† *Vide Journal des Économistes*, February, 1874, p. 221; Conrad's *Jahrbücher für Nationalökonomie und Statistik*, 1881, pp. 529, 530.

to this lies in the fact of the heavy loans which Italy made during these years, by which specie was continually brought into the country. These loans,* as we have already seen, were:—

<i>Date.</i>	<i>Rente.</i>	<i>Nominal capital.</i>	<i>Price of emission.</i>	<i>Net product.</i>
11 October, 1859	6.1 mil.	122.0 mil.	80%	86.1 mil.
12 July, 1860	9.2	186.4	80½	146.7
17 July, 1861	35.7	714.9	70½	496.9
11 March, 1863	35.7	714.3	71	483.8
13 December, 1863	15.0	300.0	68	197.5
19 January, 1865	.7	14.3	66½	9.1
11 March, 1865	23.0	660.0	66	443.4

These loans were the real ground of Italy's ability to hold her gold and silver. Still, it is hardly necessary to point out that such a means of continuing on a specie basis could at best be only a temporary affair. Borrowing could not go on forever. And it was evident that, unless the condition of Italy's finances underwent some great change, her credit must soon come to a dangerous crisis.

b. THE SUSPENSION.

Late in 1865, Sella presented the estimates † for the following year. Again there was a deficit. The receipts were estimated at 668 mil., the expenditures at 933 mil., and the deficit at 265 mil. This was to be met in part by stricter economy, which would yield 80 mil., and by additional taxation, which would yield 140 mil. more. The minister undertook to meet the 100 mil. remaining by a decisive move. He proposed the suppression of the religious corporations and the conversion of their patrimonies to the use of the State. The morality of such a measure was decidedly questionable. Even in politics there is left a prejudice against taking somebody else's property merely because it happens to be needed. But the measure would more than supply the sum required, and the State had undeniably fallen into desperate straits. In this form, however, the budget was not definitely acted upon. Sella found himself in difficulty because of the desire to impose the unpopular grist-tax (*macinato*), and was succeeded by Scialoja; and a new budget was brought forward. Scialoja based his estimates ‡ on the former budget, and accepted the

* *Storia della Finanza Italiana dal 1864 al 1868.* R. Bonghi. Firenze, 1868.

† *Annuario*, 1866, pp. 463-466.

‡ *Ibid.*, pp. 497-528.

deficit, as before, as 265 mil. To meet this, he proposed to make economies in the War Department—strangely enough in view of after events—amounting to 30 mil. and in the other departments amounting to 25 mil. This would reduce the deficit to 210 mil. By a reorganization of the direct tax, and by the imposition of further taxation, not including the grist-tax, he hoped to bring the deficit down to 85 mil. To cover this latter sum, he repeated Sella's proposition concerning the religious corporations. The plan was sharply attacked, but finally was accepted. Later, towards the end of February and early in March, it became evident, in view of approaching events, that these plans would not be sufficient. Opposition in the Chamber made the ministry weak, and the financial estimates did not yield the hoped for result. In March, there were negotiations for a loan* of 250 mil. between the minister and a number of Italian credit establishments. These agreed at first to float the loan, although there was much popular objection to the arrangement. But in the beginning of April, owing probably to the severity of the crisis then prevailing, notably in England, and to the uncertain outlook, they were compelled to withdraw their offer, and leave the government to its own resources.

The uncertain outlook referred to was, of course, the prospect of war. Early in April, the political horizon began to darken rapidly. Prussia and Austria were on the point of declaring war; and every Italian saw that Italy, in such an event, without alliance, might find her national existence imperilled. Later, the political situation grew easier. On the 8th of April, the terms of a treaty with Prussia were settled, and ratified by Italy on the 14th and by the King of Prussia on the 20th of the same month. But affairs finally reached a climax on the 30th of April, when the Italian Parliament voted unanimously a declaration of war against Austria.

On the following day, May 1, 1866, the minister decreed the *corso forzoso*. A forced circulation was given to the notes of the National Bank of the Kingdom, and to the notes of the Bank of Sicily and of the Bank of Naples, in Sicily and in the Neapolitan provinces respectively. At the same time, the

* *Inchiesta sul Corso Forzoso*, 1868, Scialoja's testimony, vol. III. p. 464.

National Bank advanced to the government a loan of 250 mil. for the purpose of carrying on the war. Later in the month, the forced circulation was further extended to the notes of the National Bank of Tuscany and of the Tuscan Bank of Credit within the Tuscan provinces.

The circulation on the 30th of April was composed of both paper and specie. The paper* amounted only to some 249 mil., issued by the various banks. The sum of the specie in circulation amounted to 903.5 mil., made up of 430.5 mil. in gold and 473 mil. in silver and base money. Of the gold, 419.5 mil. was in decimal coin, and the remainder, 11 mil., in other forms. The silver, amounting to 423 mil., was divided into 86 mil. in 5 fr. pieces, 119.5 mil. in pieces ranging downwards from 5 fr., and 217.5 mil. in non-decimal forms. The bronze and the brass money amounted to 44 mil.; and, finally, the base money of all denominations—none greater than 1 fr.—was valued at 6 mil. A deduction, however, must be made. Some 15 mil. of bronze money in excess of the needs of the circulation lay idle in the treasury. Deducting this 15 mil. of bronze, we have, as a final result, 888.5 mil., the total specie circulation. The circulation, both specie and paper, then, on April 30, 1866, was 1,187.5 mil. lire.

Whether or no the forced currency was necessary has never been fully settled. In 1868, a Committee of Inquiry† was appointed by the Italian Parliament, which investigated the causes leading up to the suspension; and, after a laborious and painstaking investigation, a majority of this committee reported that the forced currency was *not* demanded on either financial or political grounds or by the economic interests of the country. This report, however, did not remove all doubt. The decision seemed to be in the face of facts, as it was against the overwhelming belief of the Italian people, and later writers have been inclined to deny its soundness. The

* Cf. *Annuario Statistico Italiano*, 1878, Parte II., p. 122. And see *Relazione sulla Circolazione Cartacea* (by Minghetti and Finelli, 1875), p. 16.

† The committee was composed of MM. Seismit-Doda, Cordova, Alexandre Rossi, Sella, Messedaglia, Lampertico, and Lualdi. The majority who reported adversely to the action of the minister were Cordova, Lualdi, Rossi, and Seismit-Doda. The minority declared any investigation as to the necessity of the forced currency to be beyond the province of the committee.

question, therefore, is an open one; and, although this article can obviously make no pretence to any exhaustive examination of it, still it is of such peculiar importance to the right understanding of the subsequent financial history of Italy that we must enter into it with some fulness.

The condition of the treasury on April 20, 1866, according to the report* of Alfurno, Director-General, was as follows:—

1. Actual cash	28.0 mil.
2. Notes of the National Bank and of the Tuscan National Bank and certificates of the Bank of Naples	68.0
3. Bronze coin	15.3
4. Credits on foreign banks	1.5
Total	112.8 mil.
Deducting as before the 15 mil. in bronze coin and 2 mil. due to the Bank of Sicily	17.0
Total	95.8 mil.

So far as the needs of the treasury were concerned, the director declared, this amount would probably be sufficient for all service until the middle of the year. For the July quarter of *rentes*, about 100 mil., provision had already been made. Funds had been secured to the amount of 57.8 mil. by stipulating an advance from Rothschild as an instalment on the loan of 425 mil. (May, 1865), to the amount of 25 mil. by agreement with the Savings Bank of Milan for an instalment on the price of the State railways, and to the remaining amount of 15 mil. by two loans,—one of 10 mil. from the Bank of Naples and one of 5 mil. from the Bank of Sicily. About 80 mil. of treasury bonds were to fall due in May and June. The director counted on the ordinary renewal of 10 mil. per month, while, in addition, a renewal of 15 mil. at 3 per cent. had been secured from the Bank of Naples. Still, this would leave 45 mil. of these bonds to be provided for, of which 30 mil. were held by the National Bank. The cash fund was therefore still further reduced from 95 mil. to 50 mil. Account being taken of the customary delay in payment, due to the tardy presentation of the coupons, this sum of 50 mil. would probably be sufficient for the ordinary needs of the treasury. But it would only be sufficient, provided everything went well. If, by chance, events were so to turn that unfore-

* *Inchiesta*, etc., testimony of the Director-General, vol. II. p. 19.

seen expenditures were rendered necessary, these calculations would have to be changed.

During the ten days from April 20 to April 30, the effective cash in the treasury went down from 28 mil. to less than 24 mil., and the amount of notes held of the several banks diminished from 68 mil. to 50 mil.

To describe the economic condition of Italy at this time is extremely difficult. So many elements enter into it, and these mixed in such confusion, that to give any precise estimate of the strain endured by Italy just previous to the suspension is well-nigh impossible. Perhaps, however, if we go back a little, and try to follow down the general drift of events, we may be able to get before us some sufficient idea. We have seen that not only did Italy have continuous deficits in the budgets, necessitating enormous loans from abroad, but that the foreign trade was largely against her. Obviously, as we have said, such a condition of affairs would tend to produce a demand on Italy for gold. This may be taken as a starting-point for our review of the general movement.

(a) For at least two years, *rents* had been coming back into Italy freely, for the reason, among others, that it was higher there than abroad. This was shown, for instance, by the fact that as early as January 12, 1865, the pressure had grown so strong that the National Bank of the Kingdom, by far the most important financial institution in Italy, was forced to restrict its advances* on the deposit of securities as collateral. As the year 1865 went on, credit grew rapidly worse, and a crisis swept over Europe; and, at the beginning of 1866, the rate of discount was standing at 5 in the Bank of France, and at 8 in the Bank of England. In Italy, this crisis was, of course, severely felt. The strain on the National Bank, as the leading credit institution in the kingdom, had become so great that its specie reserves began to be seriously affected; and, early in 1866, it was forced to secure two loans of 2 mil. each in gold, in order to keep up its payments, and these it secured with difficulty. Finally, on January 10, 1866, it sharply restricted its discounts, and refused to advance on

* *Relazione sulla Circolazione Cartacea*, p. 6.

paper not bearing at least three names. The contraction was already stringent; but this action served to intensify the difficulty, for not only was it almost tantamount to a refusal of credit to commerce, but, owing to the fact that numerous lesser banks were accustomed to have paper rediscounted at the National Bank, a refusal to do this at a time when they were already hard pressed left them in a precarious position.

(b) Into this general state of affairs in January came a new disturbing element, the fear of immediate war. The loans which Italy had made had vastly increased her indebtedness abroad, as the following figures, showing the foreign payments* for interest by the State from year to year, will indicate:—

1861 . . .	36 mil. lire	1864 . . .	82 mil. lire
1862 . . .	55 "	1865 . . .	90 "
1863 . . .	60 "		

Rente† was now rapidly falling. It had ranged at about 65 during the year 1865; but in February, 1866, it had fallen to 61, and timid foreign holders, recognizing the straits in which the Italian government was laboring, and the near approach of war, were returning *rente* to the Italian market, in order to realize. The director of the National Bank expressly declared‡ to the Committee of Inquiry, and his declaration was agreed to by the four other great banks,—the National Bank of Tuscany, the Tuscan Credit Bank, the Bank of Naples, and the Bank of Sicily,—that at this time foreign bankers no longer kept Italian paper in their portfolios, having foreseen the probable suspension, but were sending it back into Italy to be sold at a loss, and that in April, 1866, Italian bonds could not be negotiated abroad. This return movement undeniably produced a considerable effect in Italy, particularly in the great cities of the north. Still, its influence was nothing extraordinary, as is sometimes maintained. The country was not flooded with returning *rente* and bills. The rate of exchange§ just prior to the suspension, which was 1¹/₂ below par on Paris, and on London 24.80 (par 25.22), shows clearly that the amount of paper sent back was not excessive.

* *Relazione*, p. 5.

† *Annuario*, 1864, Table XIII.

‡ *Inchiesta*, etc., vol. i. p. 262, testimony of the Director of the National Bank.

§ *Ibid.*, vol. iii. p. 50.

(c) But the contraction of credit visible in January grew little, if any, easier as the days went on. The National Bank found its restrictions insufficient, and later, in March and April, was forced to suspend its advances and discounts almost entirely. This left commerce in a desperate state. A heavy pressure existed on all the banks, caused by the steady withdrawal of deposits and the effort to change notes into gold. For instance, the following table* of the five principal banks in the kingdom shows a strong falling off in deposits and running accounts:—

	Dec. 31, 1865.	April 30, 1866.
National Bank,	18.2	24.7
National Tuscan Bank,	10.9	8.1
Bank of Naples,	48.9	35.8
Bank of Sicily,	18.2	17.2
Tuscan Bank of Credit,	2.3	1.6
	<u>98.4</u>	<u>87.4</u>

The increase in the figures of the National Bank is to be accounted for by the fact that funds taken from the smaller banks were put there for greater security. But a falling off of 11 mil. in a total of 98 mil. within four months is certainly an evidence of poor credit conditions. The change is even more striking, if, on account of its peculiar position, we omit the National Bank in our reckoning; for we then have a total for the remaining banks, on December 31, 1865, of 80.2 mil. as against a total of 62.6 mil. on April 30, 1866, or a loss within four months of 17.6 mil.

(d) In addition to what we have just described as a general crisis, there now came what may be called a special crisis. The great contraction of credits everywhere, and the flow of *rentes* and bills back into Italy, together with the restrictions of the National Bank on its discounts and advances, began to shake the position of some of the large credit banks, particularly in Turin and Genoa. The *Credito Mobiliare*, for instance, in Turin saw its running accounts† at interest fall to about one-third in four months: 1866, January, 22.8 mil.; February, 21.7 mil.; March, 20.8 mil.; April, 15.8 mil.; May, 8.5 mil. One notes at once that the decrease of 7 mil. from January to May is equal to the increase shown above in the accounts of

* *Inchiesta*, etc., vol. I. p. 291.

† *Ibid.*, vol. I. p. 295.

the National Bank during the same period. All banks dealing in commercial paper of any sort were hard pushed. Those, however, which had been accustomed to rely on the National Bank were in a doubly unfortunate position, for this latter institution could now no more than take care of itself.

(e) The contraction grew more and more stringent. On April 18, the Chamber of Commerce at Alexandria advised* that the National Bank enlarge its discounts; but this, under the circumstances, was impossible. At the end of April, the climax † was in sight. On April 27 and 28, the *Credito Mobiliare* of Milan and that of Florence, the *Banco di Sconto* in Turin, and other similar institutions, were violently assailed by the public. On April 29 and 30, letters and telegrams were received by the Minister of Finance from Genoa, announcing colossal failures in that city unless the government should adopt extraordinary measures for the relief of the banks and the protection of their specie reserves. A peculiar importance, it should be said, attaches to these events, in that the commerce of Italy centres mainly around a few large cities in the north, and that it was just here, in the worst possible place, that the special trouble existed. And in the already gloomy and depressed state of trade, and with a war almost at the door, there could be no knowledge where the failures, once begun, would end, or how far-reaching would be their financial and moral effects.

This, briefly stated, was the position of affairs on April 30, 1866, when the war was declared.

From the minister's point of view, ‡ the situation left little room for doubt. It was true, indeed, as Scialoja declared to the Committee of Inquiry, that the payment of the July quarter of *rente* was assured; § but there then remained in the Treasury but 95.8, of which only 28 mil. was in specie. As to further resources, everything was discounted except certain taxes whose amount for the current year could not be immediately recovered. Leaving aside all question concerning 195

* *Inchiesta*, etc., vol. II. p. 25.

† *Ibid.*, vol. II. p. 29 et seq.

‡ *Ibid.*, vol. III., Scialoja's testimony, pp. 464-472.

§ *Ibid.*, vol. II. pp. 20, 21.

mil. of treasury bonds which were in circulation,—of these, 80 mil. falling due in May and June,—he estimated that the war with Austria would call for 600 mil., and that the government needed 300 mil. more. Here, then, was a need for 900 mil. in the presence of a cash balance of 95.8 mil. at the outside. A loan was out of the question; for the loan of 250 mil. which the government had tried to make in March had proved impossible, and things were far worse now. No encouragement could be drawn from the public. During April, the crisis had grown almost hourly more intense. Foreign merchants refused to give credit, and were sending in their demands to be collected at any price. In the general panic, information came of the imminence of failures of the highest importance, if certain banking houses were not protected. What could the minister do, with Italy unable to borrow, industry calling for help, and a great war, involving the national existence, to be fought? One obvious way out of all these difficulties was still open, and the culmination of events left no choice but to take it. On April 30, Parliament voted with but one dissenting voice to give the minister power to take extraordinary means to carry on the war; and on May 1 the forced currency was decreed. The public received the announcement with satisfaction, and the Chambers of Commerce of Florence and Genoa voted thanks to the minister.

From the point of view of the Committee of Inquiry in 1868, the situation presented a far different aspect. Obviously, the treasury was not insolvent, and therefore did not need the *corso forzoso*. As to the economic conditions of the country, the committee declared that the general crisis was lighter, or at least was no more severe in April than in January; that the amount of the returning *rente* and bills, when compared with the total amount, was insignificant; and that the special crisis was due to but *four* banks, whose difficulties were owing mainly to their own mismanagement. After this summary disposal of the salient facts, the committee naturally concluded that the forced currency was not demanded on economic grounds. The one point remained, then, how to find money for the war. This was easily done. The days just before the war were days of extraordinary enthusiasm and great patriotic

fervor, when party disappeared, and all men were alike eager for a struggle that would free Venetia from Austrian tyranny and consummate Italian unity. These pleasing emotions, the committee thought, should have been turned to practical account. Either a voluntary loan should have been made for the support of the war, or, if such a loan seemed likely to prove unsuccessful, then a forced loan should have been levied on the better provided classes.

Both of these views, so far as they concern the economic situation of the country, are unquestionably exaggerated. The minister undoubtedly overestimated the amount of panic prevailing, and the committee undoubtedly underestimated it. The truth lies, as our statement has tried to show, somewhere between the two.

We have already said that we do not propose here to make any attempt to answer definitely the question whether or not the forced currency was a necessity. Such an attempt lies obviously far beyond the necessary limitations of this article. We may, however, obtain a much sharper view of the problem, if we examine it in the light of the means proposed for its solution. What were the real facts of the situation, so far as we know them? They were these: *first*, the position of the treasury was solvent, but it could do little more than care for its ordinary daily needs; *second*, a severe contraction of credit existed, owing to a general crisis, which was more or less intensified by the returning *rente* and bills; *third*, a special crisis of some magnitude existed in the very heart of commercial Italy; and, *fourth*, a war had just been declared which would demand at least 600 mil. for its support. Now, let us further ask, How, given these data, could the sum required for the war best be secured? Since a foreign loan was admittedly impossible,—*rente* * stood at 43.90 in Turin on the day before the suspension,—there were but two ways left: either to declare the *corso forzoso* or to rely upon a loan, voluntary or forced. The advantages of the forced currency are obvious, and also the disadvantages. We need attempt no particular

* *Relazione sulla Circolazione Cartacea*, p. 8; and see diagram, *ibid.*, p. 220, for movement of exchange, five per cents. and gold, 1866-75.

elaboration of the one or of the other. There could be but one reason sufficient to justify its introduction, and that of a negative sort; namely, that the other means proposed seemed unavailable. So far, therefore, as an examination of the question is possible for us here, our problem will lie in the consideration of the voluntary and of the forced loan.

We may simplify the inquiry still further by putting out of mind any thought of a voluntary loan. Italy may indeed have been half-mad with enthusiasm; but enthusiastic patriotism is a feeling widely separated from pocket patriotism. Without doubting for a moment the sincerity and depth of the patriotic feelings of the Italians, we have no reason to believe that a voluntary loan would have yielded any appreciable amount of money. Voluntary loans are seldom, if ever, successful. There have probably been few populations so stirred to the depths as the German in the beginning of the war of 1870-71. Yet the German voluntary loan yielded only a few hundred thalers! We will go on the supposition, therefore, that a choice existed only between the *corso forzoso* and relying upon a forced loan.

The main objections against relying upon a forced loan sum themselves up in the present writer's mind to three in number, together with a preliminary difficulty. These are: *first*, the strong chance that the forced currency must be decreed under any circumstances; *second*, the probability that a forced loan would prove insufficient; and, *third*, the serious risks that were necessarily involved in a forced loan. We will touch upon these very briefly in order.

The preliminary difficulty lay in the collection of the forced loan. To say nothing of the fact that it must be raised from a country which was in a half-panic condition and taken from a people whose taxes had almost doubled in five years, the returns from such a loan would require considerable time for collection,—at least, the fifteen days required in an anticipation of the ground tax. This delay was inevitable, and it involved the objection that the minister could feel no certainty that either the war or the panic would wait until he was ready to receive them. Still, we may pass over this difficulty with a mere mention; for it was of little weight when compared with the other considerations.

The first objection urged was that a strong chance existed that the suspension would have come under any circumstances, even though it had not been directly necessitated by the war. For consider what Italy's general movement had been. Italy began her national career with a debt of 2,300 mil., and in the first five years of her existence, in spite of the most desperate efforts, was forced to double this by the addition of 2,500 mil. more of nominal debt from loans. The foreign trade during all these years had been moving strongly against her. Lanza, a leading deputy in the Italian Parliament, declared * to the Committee of Inquiry that the causes of the suspension were clearly in operation as far back as 1861. Affairs, however, had grown worse and worse. If a forced currency seemed to be coming in 1864, certainly it must have been close at hand in 1866, when, under conditions infinitely more severe, with a treasury unable to do more than barely care for its own needs, there came an imperative demand for 600 mil. for the war. But whether it was necessary or not is not here the point. All that is here called to view is that the general movement had been rapidly downwards. If we omit the other considerations, a country which lives on foreign loans, secured only by the payment of a high premium, is surely generating the necessity of a forced currency. There could be but one reason sufficient to justify ignoring this obvious tendency; and this would lie in the hope that, if the war were struggled through with somehow, without recourse to a forced paper, Italy after the war could continue to hold a specie basis. Certainly, we have reasonable ground for doubting this. A successful war would undeniably bring its benefits. The long struggle with Austria would be at an end, and Venetia would be united with the new kingdom. But these benefits, financially speaking, could not be realized for years to come. So far as any immediate financial change was concerned, little could be expected but a repetition of the old story of deficits and loans, and an unfavorable foreign trade. If Italy before the war, and even before the fear of war, was moving steadily and rapidly towards suspension, there was little reason for hope that Italy, after the war was done, loaded down with new burdens and

* *Inchiesta*, etc., vol. III. p. 135.

perhaps impoverished, would be in any better situation. On the contrary, the new debt and the burdens of the war would leave the country worse off than before. Every element which had been making towards suspension before the war would have been making towards it afterwards with added strength.

The truth of this may be seen by the actual facts. Italy's finances showed little, if any, improvement for at least three or four years. As it was, with a war favorable beyond expectation and short beyond hope, the budget deficits until 1870 grew but little smaller, and this in spite of every exertion, in spite of rigid economy, and in spite of the most severe taxation,—taxation touching almost every article that entered into either the essentials or the enjoyments of the people, bread, meat, salt, fruits, tobacco. Not until the year of the occupation of Rome (1870) did Italy begin positively to forge ahead. And the real cause of this new progress lay primarily, in the writer's view, not in Italy at all. It lay rather in the speculation and in the demand for investment brought about by the Franco-Prussian war and the after payment of the French indemnity. A species of hot-house growth of credit and industry was caused, which, disastrous to other countries, was yet, owing to Italy's peculiar conditions, on the whole both advantageous and healthful for her. The current of events before 1866, then, was unquestionably sweeping Italy towards suspension. There could have been little reason, at least at the time when the suspension was decreed, to believe that this current would change its course. Affairs had to grow worse before they could grow better; and, on the whole, we may perhaps not unreasonably conclude that, so far as could then be seen, even if the war did not directly necessitate a forced paper, this must probably have been Italy's destiny in the end.

We pass now to the second objection. Apart from the general drift of affairs, there was a strong probability that the forced currency would be rendered necessary by the utter insufficiency of the forced loan to carry on the war. Of course, the war was surprisingly short. Austria's military strength was rated second only to that of France. No one even dreamed that the struggle would last but six weeks; and, indeed, if before the war, when Prussia's military strength

was a practically unknown factor, any one had prophesied so speedy a termination, his words would have seemed mere nonsense. The whole question of victory or defeat lay in the doubtful strength of Prussia, for all that Italy could do at best was to make as large as possible the number of Austrians required to give her a sound drubbing. If now, as at the time seemed so likely, the war were either disastrous or prolonged,—if, for instance, Austria could have held Prussia at bay, so that her army after the victory at Custoza and her fleet after the victory at Lissa could have overwhelmed Italy in a war which, for existence's sake, Italy must yet fight to the bitter end,—would one forced loan, or two, or three, have been sufficient to enable Italy to continue such a struggle? Obviously not. As it was, the war, though so unexpectedly short, cost * some 870 mil. lire. It is doubtful if more than one forced loan could have been successfully made. Certainly, in view of Italy's position, a long war could not be fought through on loans alone. How, then, could the expenses have been met? There is but one answer. If the war were prolonged, the forced currency must be declared.

Both of these considerations deserve careful attention, although they do not directly touch the real root of the problem. We seize this when, in the third place, we come to consider the serious risks connected with a forced loan in view of the economic situation of the country. Reliance upon a forced loan meant that the Government would do nothing to ease credit or to lighten the existing strain, and that it would leave to their fate the banks which were calling for aid. This was a very grave matter. There are three points in the economic situation to be considered. We know, first, that credit was in general severely strained, that every measure the National Bank had taken looking towards its own safety had made the distressed situation of commerce more precarious, that the already strong demand for gold was being increased by the need of the Government, on the verge of war, to make purchases in specie, and that the sinking of deposits and running accounts showed an actual feeling of panic. We know, second, that, if certain credit banks were not supported, their failure was inevitable, that with them would go down the

* Sachs, *L'Italia*, p. 50.

interests dependent on them, and that, from their position in the very heart of Italy's industrial life, their failure might have crippled industrial and commercial interests throughout the peninsula. In itself, however, neither of these considerations is strong enough to call for a suspension; but it was the introduction of a third element which gave them their vital importance. This new factor was simply this: that, after the panic had had full play, the war had still to be fought and the money for its support had still to be raised. In a time of peace, the situation would have been grave enough to rouse deep apprehension. But, if the forced loan were made the chief reliance before the war had even begun, commercial interests, if not prostrated, would at least be severely crippled, while the expenses of the war would be left entirely unprovided for.

So far then as the question was one of temporary expediency, there was little room for doubt. A forced currency would tide the State and the banks, together with the people, over their present difficulties, and would send Italy into the war free from any danger of ruin going on at home. Further, the suspension would protect the specie. Italy could not afford to be stripped of the precious metals; but a disastrous or a prolonged war would have swept the gold out of Italy as leaves are blown before a storm. Beyond doubt, if there was any immediate prospect of the *corso forzoso*, it was wiser to decree it then, when it would save the country from danger of commercial disaster, when it would give the Government instant means for carrying on the war, and when, by protecting the specie, it would leave Italy in the end in an easier position. So far as the question was one of a broader expediency, looking beyond the temporary distress to the future, perhaps quite as much may be said. First of all, there was the strong doubt whether Italy could hold to the specie basis under any circumstances. Then there were the multifold considerations to the effect that Italy was in too distressed a condition to sacrifice anything for the future, and that the burden of a forced paper, even though ultimately heavier, could be easier borne than the present burden, since the effort would be extended over a long period,—and there is something to be said concerning

the intensity of a financial strain as well as concerning its duration. Finally, it is right to mention the view of those, like Scialoja, who believed, contrary to what proved to be the case, that, if once this vital crisis were tided over by means of the forced currency, Italy could rapidly put herself again on a specie basis, and be but little the worse.

So much, then, for a statement of Italy's position and prospects on the day of suspension. The subject, though accurately, has yet from necessity been too vaguely handled to enable us to draw any legitimate conclusion from what has been said. The view of the present writer, however, may perhaps be given; and it is this,—(a) that, in any absolute sense, the suspension was not necessary. Italy could probably have gone through the war and found herself at the end without a paper currency. Such a conclusion, however, is barren and of little value, for our question is not one of necessity nor of what from the stand-point of after events appears reasonable, but solely what at the time seemed most expedient for the best interests of the country. (b) That, in any broad sense, the suspension was the wiser course. Taking into consideration the general movement and prospects of Italy, the question of the war, and the distressed economic situation, the conclusion that a forced currency was demanded seems a natural one. Undoubtedly, it would have been better if some way not involving long-continued loss could have been found. Undoubtedly, it is hard to be obliged to discount the future. But the desperate conditions actually existed. There was only a choice between evils. The choice does not seem to have been made lightly; and, in the view of the present writer at least, it was made of the lesser evil. Still, when all has been said, the question is an open one; and such it will probably remain.

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SOME ASPECTS OF THE TARIFF QUESTION.

THE protective policy of the United States has had unexpected successes and surprising failures. "Success" in this connection may be taken to mean that duties have brought about a considerable development of the protected industry, while "failure" describes those cases where there has been an absence of such a development. It need not be said that such success does not necessarily imply advantage to the community at large: it indicates only that the object in view has been attained by the protective measures. There have been curious differences in the extent to which this primary object has been attained; and the results have varied not only in different branches of manufactures, but, what is more surprising, in different sorts of agricultural production. The present paper aims to give some account of the more noteworthy of these cases, and to point out that underneath them all lies a common principle, and one not unfamiliar in economics.

The census figures show very clearly what is the situation. The production of flax fibre in the United States in the census years was : —

In 1850,	3,850 tons.
" 1860,	2,350 "
" 1870,	18,600 "
" 1880,	800 "

The small quantity of flax now raised is of coarse quality and quite unsuited to the making of linen cloth. Meanwhile, importation continues steadily. The imports of flax fibre were in 1886 3,700 tons, and in 1887 nearly 6,000 tons.

What, now, is the explanation of a state of things so different from that which prevails as to most agricultural products? We get hints towards a solution of the problem by examining the conditions under which flax is raised in foreign countries. In the first place, flax is eminently a product of intensive culture, and is grown in countries like Belgium and France, whose agriculture is typical of intensive culture.* A laborious and careful preparation of the ground is required. Several ploughings and harrowings are called for; for the best flax, the land is trenched by spade. The ground must be carefully weeded, and "in Belgium the weeding is done by hand, when the plants are a few inches high, by women and children who crawl about on their hands and knees, with cloths to protect them from the ground, working always towards the wind, so that the plants may be at once blown back to an upright position." From twenty-five to thirty tons of manure per acre are ploughed in, and, in addition, liquid manure is applied. The harvest is as laborious as

* The best full account of the methods of cultivating flax and hemp is given in the report of the commission appointed by Congress during the Civil War. The report is in *Senate Executive Documents* (1864-65), No. 35. A briefer and useful account, from which we quote in the following pages, has been condensed from this source and others by Mr. Whitman in his *Flax Culture*.

the preparation. The plants are pulled by the roots, for cutting by machine or by scythe spoils the fibre; and, moreover, the part of the plant nearest the ground, which is lost by cutting, contains the best fibre.*

The process of preparing flax for market, however, is by no means completed when it has been taken from the ground. It must first be rotted, then scutched, finally hackled. Rotting consists in immersing the plants in water, and thereby loosening the coarse external covering from the inner fibre which is to be converted into linen. In the United States, this has been done for both flax and hemp by "dew-rotting,"—that is, leaving the plants exposed to the dew in the fields; but this method, while simple and easy, makes poor fibre. Fibre of good quality can only be made by immersion during from five to ten days in water, which becomes foul and noisome from the decomposition of the plants. "The flax is then removed from the pools, and in this operation too much care cannot be used. Hooks or pitchforks injure the fibre, and the bundles must be handed out by a man who stands in the now disgusting pool."

These bundles when dried are ready for the next operation, scutching, by which the inner woody pith of the plant is removed. The ancient method of doing this was simply to beat the stalks with clubs, and the reader of Tourguéneff's novels need not be told that this method is still used in Russia. Elsewhere, machines are in use, but only to a slight extent. Machines for breaking up the pith seem easy to get, and are simple enough; in Ireland, this part of the process is carried out by putting the stalks under cart-wheels. But scutching proper, the removal of the broken pith, is generally done by hand, "by beating the fibre with a blunt knife while it is held over the edge

*In reaping flax, "a careful hand, who carries his scythe low and cuts a level swath, may do excellent work, but many workmen will waste too much of the best portion of the stalk by leaving a high and uneven stubble." *Report of Commission of 1865*, p. 29.

of a sharpened board." * Finally, after scutching, comes hackling, which corresponds to the carding or combing of wool and cotton, and which leaves the clean flax fibre ready for spinning. This again was done universally by hand at the time when the Commission of 1865 reported; and Mr. Whitman tells us it is still done "mostly by hand even in large mills." The nature of the fibre apparently prevents that use of machinery for which wool and cotton are so wonderfully adapted.

Hemp and flax are much alike, and what has been said in regard to flax applies in the main to hemp. Hemp of good quality must also be heavily manured, should be pulled or cut close to the ground, water-rotted, scutched, and hackled. Bounties on hemp as well as on flax were given in colonial times, and duties have been imposed on it without interruption since the formation of the Union; yet hemp of the finer sort has never been raised, and has always been imported in considerable quantities.

It should be noted, however, that the preceding remarks apply only to the cultivation of flax and hemp for the purpose of obtaining good fibre. Flax is grown in large quantities in the United States for the seed, and hemp of coarse quality is grown in considerable quantities. Flax for seed need not be heavily manured, nor need the seed be thickly sown; weeding is unnecessary; the plants may be cut by scythe or machine; the seeds are easily and quickly separated from the fibre. Seed is produced plentifully under these conditions, and is sold to oil mills;

* *Report of 1865*, p. 32. Very recently (1885), a machine for scutching has been invented in France, which is said to work well. A process for rotting with warm water has also been invented in the same country, which is said to save time, to dispose of large masses of fibre at once, and to produce good quality. *Report of Flax and Hemp Spinners' and Growers' Association for 1887*, pp. 12-15, 26. Attempts to supersede the old methods have been numerous and hitherto unsuccessful, and it remains to be seen what will be the working of these new processes. If successful, they may serve, perhaps, with the aid of other inventions, to bring about great changes in the character and distribution of the culture of flax and hemp.

but the flax straw becomes coarse and almost useless, and is generally burned on the fields or sold for a trifle. Hemp cultivated in the same way, and then dew-rotted, yields a coarse fibre, suitable for bagging and other coarse fabrics; and it has been grown for such uses in considerable quantities, mainly in Kentucky and Missouri. In recent years, however, jute and other tropical substitutes have displaced it even for these purposes, and its cultivation seems to have well-nigh come to an end.*

The cases of flax and hemp are not unfamiliar, for general attention has been called to them by the present discussion of the tariff question. There is another instance, in many respects similar, to which reference is rarely, if ever, made. This is the failure of our high duties on imported sugar to stimulate the cultivation of the sugar beet and the manufacture of beet sugar. We have always had duties on sugar, and they have generally been high. Since the Civil War, they have ranged about fifty, sixty, even seventy per cent. on the value. In continental Europe, beet sugar, while originally much stimulated by protection, has been able for many years to hold its own in competition with cane sugar. In France, the import duty on cane sugar and the excise tax on beet sugar are the same. In Germany, the excise is but little less than the duty; and in both countries beet sugar supplies the bulk of the consumption.† The processes for

* The census figures of the production of hemp are:—

For 1850,	35,000 tons.
1860,	74,000 "
1870,	12,000 "
1880,	5,000 "

The Flax and Hemp Association Reports state the production to have been:

In 1884,	3,500 tons.
1885,	6,000 "
1886,	10,000 "

"Jute has superseded American hemp or flax for bagging for cotton, and Manila and Sisal hemp are used in place of American hemp for cordage." *Report for 1885*, p. 25.

† The excessive drawbacks (often called bounties) which have been granted in recent years on the exportation of beet sugar from Germany, France, and

making beet sugar are public property, and our climate and soil are as well suited to the cultivation of the beet as are those of Central Europe. Attempts have been made in Maine, and an experiment is now being made in California in stimulating beet culture and making beet sugar; yet not even a beginning has been made in displacing cane sugar.

For an explanation of this phenomenon also, we may turn to the conditions under which beets are raised. These conditions are in many ways similar to those under which flax and hemp are cultivated.* The ground must be thoroughly prepared, deeply ploughed, and frequently hoed. "The more the culture approaches that of a garden, the more the quantitative and qualitative yield will be increased." Between ten and fifteen tons of manure to the acre are applied, and are supplemented by other fertilizers. The roots are not ploughed up, but only loosened by a plough run between the furrows. They are pulled by hand, and care must be taken to prevent any bruise or cut, which may cause them to decay when stored. The leaves are cut off in the field by a knife. Ten or twenty laborers are needed to pull and prepare for transportation in one day the roots on an acre of land. So far there is an obvious analogy to the cultivation of flax and hemp; but, with beets, we have a still further characteristic of intensive culture. The beet cake which is left over in the sugar factory after the saccharine matter has been ex-

other countries, have given an extraordinary stimulus to the production of beet sugar. But this episode does not affect the point considered in the text; for, before the artificial stimulus began, the beet sugar industry had reached a position of independence. The Sugar Convention of last year (1888) promises to do away completely with this cause of complexity in sugar production.

* See a *Report on the Culture of the Sugar Beet* made to the Department of Agriculture in 1880 by Mr. William McMurtrie. Quotations in the text are from this report, unless credited otherwise. An excellent brief account is given by E. W. Hilgard in the *Overland Monthly*, vol. viii. pp. 561-574. An account of the beet culture, designed to aid its introduction in this country, is given in Mr. L. S. Ware's *The Sugar Beet* (Philadelphia, 1880).

tracted is a valuable food for cattle, who again supply manure for further cultivation. In Germany, it is common to combine the processes of beet-raising, sugar-making, and cattle-feeding in one large undertaking. Where this is not done, the beet cake is often exchanged by the sugar factories, weight for weight, for beet roots. Obviously, the beet cake can have so high a value only in countries where stall-feeding is universal, or at least very common, and grazing land scarce. In a country like the United States, having a comparatively thin population, grazing land is plenty, and cattle-food correspondingly less in demand.*

The characteristics of the branches of agriculture which we have been considering are, obviously, intensive cultivation and little use of machinery. The American farmer spreads his labor and capital thin over a large surface of land; and he uses machinery and labor-saving devices vastly more than the peasant or the landed proprietor of continental Europe. It is generally implied, in discussions of our international trade, that the extent and fertility of our soil explain our great agricultural exports. This is true, as far as it goes. But it should be qualified by adding that the products for which we have the most decided advantage and which we export in largest quantity are those suited not only for extensive cultivation, but suited also for the liberal use of agricultural machinery.

* In recent years, experiments in making beet sugar have been made in California, which promise better than any of the earlier attempts. A small factory at Alvarado has been in operation for a number of years, and has paid. A much larger factory was put in operation in 1888 at Watsonville. It remains to be seen whether these enterprises will succeed in the long run, and there is a further question whether they would succeed if the duty on sugar were repealed. The fact that sugar from the Hawaiian Islands is admitted duty-free does not prevent the Californian beet-sugar enterprises from getting the practical benefit of a protective duty; for, as might be expected, this limited exemption from duty has not brought down the price or benefited consumers. It is not impossible that the extraordinary combination of soil and climate in California may bring about a development which could not be attained in other parts of the country.

Wheat and corn are the readiest examples of such products, and it is mainly for raising these that we have achieved the most remarkable triumphs in agricultural machinery. Flax, hemp, and beets, on the other hand, require intensive culture, and admit of little aid from labor-saving devices. The causes, therefore, of the agricultural competition of America, which has had so great an effect on the economic history of the last fifteen years, are to be found not only in physical conditions of soil and climate, but also in those moral and intellectual differences which lead the American to use better tools and more machinery than his European competitor. A keen and disinterested observer has gone so far as to refer the severity of American competition solely to this latter class of causes.* The American farmer uses lighter and better tools; he works intelligently and strenuously while he is at it; his wagons are lighter by half, and his horses better and more easily harnessed; the mowing machine is used where the German peasant still uses the scythe or even the sickle; ploughs are better; reapers, binders, threshers, are used; time and labor are saved by riding instead of walking, by windmills and piping in place of the constant drawing and carrying of water which exhaust the German agricultural laborer. Every exertion, moreover, is more strenuous and active; the German laborer and farmer becomes another man when he has lived in the United States for a year or two.

If greater use of machinery, more intelligent use of time, and steadier exertion were of equal advantage in all branches of agriculture, they would not affect international trade; but they tell more in some branches than in

*H. Semler, *Die wahre Bedeutung und die wirklichen Ursachen der nord-amerikanischen Concurrenz*, Wismar, 1881. The preface, by another hand, tells us that Mr. Semler is a German of San Francisco, "who has lived for many years in various parts of North America, and has observed its conditions with the eyes of a man of wide experience." The book was written with the object of conveying a lesson to German agriculture.

others. The American farmer tends to confine his agriculture to those products for which they tell, and the country imports agricultural products in which they do not tell. This principle, of course, does not apply to all the characteristics of our agriculture. Peculiar advantages of soil and climate suffice in some cases, of which cotton and tobacco are the most obvious and important, to give a superiority little affected by greater efficiency or intelligence. But the most striking features in our agricultural situation seem to be explained by this line of consideration; not indeed by this solely, but by this taken together with the effects of a wide extent of virgin and fertile soil.

We may now turn to another set of cases, in manufacturing industry, where a similarly uneven working of protection has shown itself. The first case of this kind is in the silk manufacture, which I will examine with some detail.

The manufacture of silk goods in the United States is in the main of recent date, having come into being since the Civil War. To this general statement, however, there are two exceptions. Sewing silk has been made, in one way or another, for over a century. For fifty years after the Revolution, its manufacture was carried on, chiefly in Connecticut, as a household industry. About 1829, machinery began to be invented, was continually improved, and made the industry a manufacture in the modern sense of the term. In 1852, a new step was taken in the production of machine-twist for the sewing-machines which were coming into general use. A very large development of this branch of the industry took place, and the Census of 1860 reported the value of sewing-silk made to be no less than \$3,600,000.* The

* See the sketch in Mr. Wyckoff's *Silk Manufacture in the United States*, pp. 32, 42-46. See also a curious anonymous volume, *Silk Culture in the United States*, New York, 1844, which gives interesting information as to the early

second branch of the silk manufacture, which sprang up before the Civil War, was the making of fringes and trimmings. We have little information as to its early history, but in 1860 its products were found by the census to be worth \$2,800,000. Neither the manufacture of sewing-silk nor that of trimmings received during this period any special encouragement from import duties. Sewing-silk had been admitted between 1833 and 1841 at a duty which gradually went down from forty to twenty per cent. Other silk manufactures were admitted free of duty. The tariff act of 1842 imposed higher specific duties for a few years, but the act of 1846 imposed a duty of thirty per cent. on sewing-silk and one of twenty-five per cent. on other silk manufactures. These rates were reduced to twenty-four and nineteen per cent. respectively in 1857. Notwithstanding these moderate duties,—moderate, at least, in comparison with those of later years,—there was a marked growth of both industries in the decade between 1850 and 1860.

In striking contrast with these two cases is the development of other branches of the silk manufacture. When the Civil War began, the duties on silks were raised, naturally and with good reason; and in 1864 the general duty was sixty per cent. Like so many other of the duties imposed at that time, it remained substantially unchanged after the war closed. The only change of much note has been a reduction to fifty per cent. in the tariff act of 1883. The high duty has brought into existence a considerable and varied silk manufacture. The effect in this case, unlike that of some other duties, was not intentional. The high duties on silks were imposed during the war in order to raise the revenue, with little thought of protection and without solicitation from domestic pro-

history both of silk culture and silk manufacture. In the introduction to the volume on manufactures in the Census of 1860 there is a good sketch of the history of the silk manufacture to that date.

ducers. In this respect, they differ from avowedly protective duties, like those on wool and woollens. But they have been followed by more marked effects; they have created an entirely new industry. The development of the silk manufacture was comparatively slow before 1870. It proceeded more rapidly in the years of activity preceding 1873. A new stimulus seems to have been given by the Centennial Exposition of 1876. The manufacture of trimmings on a wider scale was first undertaken; then that of ribbons came; soon afterwards that of brocaded and colored silks and satins, followed by that of plain piece-goods. The manufacture of silk handkerchiefs received a remarkable impulse from the Exposition.* At the present time, the domestic silk products are at least equal in value to the imported.† Many kinds of silk goods are no longer imported. This is the case not only with sewing-silks and trimmings, but with many articles of which the domestic production did not begin before the war, such as handkerchiefs and most kinds of ribbons. Other articles, again, are made little or not at all, especially the finest piece-goods. Between these classes comes the debatable ground, on which foreign and domestic silks compete. Here may be placed most dress silks. The domestic producers in recent years have been steadily increasing their hold on goods of this sort, and now supply much the greater part of their consumption.

This brief sketch of the history of the silk manufacture shows how different has been its development from that of other textile industries. The manufactures of cotton and wool attained a large growth and a firm position long

* See the sketch in Mr. Wyckoff's *Silk Manufacture*, especially pp. 42-51.

† Mr. Wyckoff estimated the value of silk goods made in 1886 at about \$60,000,000, probably a liberal estimate. The declared value of the imports in recent years has ranged between \$30,000,000 and \$35,000,000. Making allowance for duties and for undervaluation of imports (said to average at least twenty-five per cent.), we may conclude that the American public pays out about as much money for domestic as for foreign silks.

before the Civil War, while that of silks is, in the main, of very recent date. Silks are still imported more largely than other textile goods. The explanation of these facts must be sought in the character and processes of the industry.

The peculiarities of the silk manufacture are the result of the qualities of silk fibre.* Raw silk is not made in the United States. Spasmodic attempts to encourage its production have been made, by bounties during the colonial period, by premiums in the early years of our national existence. At the present time there is a feeble attempt to establish it in California. The hopelessness of these attempts has permitted raw silk to remain on the free list, and the entire supply is obtained by importation. The raw silk so imported differs in marked ways from cotton and wool. In the first place, it corresponds not so much to raw cotton as to cotton carded and spun. It has been reeled from the cocoons, perhaps rereeled; and on the character of the reeling depends mainly the quality of the fibre.

There is found on the outside of every cocoon a considerable amount of light thread, containing more or less roughness and impurity, and, in general, unfit for reeling. This ought to be stripped off entirely, and accounted as "waste silk"; but some of it occasionally finds its way to the reel, in inferior grades of the raw material. When a filament that is fit for the reel has been reached, it is found that this filament is itself uneven in strength and thickness, the exterior layers being weaker and thinner than those nearer the insect. It is the business of the experienced reeler to put a thread of an even thickness and strength on his reel. To do this, he may have to unite four, five, or more filaments, from different cocoons, on a single thread, the number of filaments depending on their comparative thickness and the size of the thread required.

*The description of the silk industry in the following paragraphs is derived largely from Mr. Wyckoff's instructive book on *The Silk Goods of America*; and the quoted passages are taken thence, unless credited to other sources. This volume is not to be confounded with the same writer's *Silk Manufacture*, to which reference has been previously made.

But, even after this laborious preparation,—which, we may note here, goes far to account for the failure to produce raw silk in this country,—the fibre is by no means of homogeneous quality, and by no means ready for the machine.

There are about a dozen distinct processes which raw silk must undergo to prepare it for the loom. . . . In each of these processes, except dyeing, imperfections in the thread cause loss of time and material. Suppose, for instance, that the raw silk, as imported, is uneven. That is to say, the continuous thread which is to be wound on a spool is found to be of irregular thickness as it unwinds from the reel. Such a thread is stronger in some parts and weaker in others. What happens? Probably the thread breaks in the first winding from the reel. The winding machinery stops automatically, and perhaps a portion of the thread which is weaker than the rest has to be pulled off and thrown aside as waste silk. Then a knot must be tied, and the winding goes on again. But, if the raw silk is very irregular in thickness, a similar accident can happen in any of the subsequent processes; a loom may have to be suddenly stopped. It is always the same story,—breakage, stoppage, waste of time (labor) and material. The loss of time, when machinery, running at high speed, has to be stopped, becomes a serious matter, from the mere fact that there is no production during the stoppage. "It costs," said a manufacturer, "fully five times as much to tie a knot in this country as in France."

To eliminate, as far as possible, defects of this class, silk is subjected to a series of sortings between the steps of its progress from the cocoon to the loom. . . . Our manufacturers take more pains than formerly to make their own sorting of the raw material fairly accurate, previous to the first winding. Moreover, at a later stage, before they are dyed, the threads are weighed with exactness by a mechanical process called "drumming," and sorted again. . . .

One of the preparatory processes that precede weaving has been mentioned as "picking." This consists of spreading out every thread of the warp separately, examining it with the utmost minuteness, and removing all knots, slugs, and irregularities. A large number of slowly moving threads are spread out like a huge fan; while keen eyes are bent upon them, and nimble fingers seize and extract the imperfections. . . . In Europe, where weaving is done mostly by hand, picking is part of the business of the weaver: he stops his loom at any moment to remove a knot or slug from the thread as it is woven. He is expected to turn out goods free from defects of this

character. The system here is entirely different, and it is necessary to have all the threads of warp and woof as perfect as possible, so that there shall be no stoppage of the power-loom.

The concluding words of this passage point to the striking contrast between the methods of the silk manufacture in this country and in those parts of France and Germany which still remain its chief seats. We cannot describe this instructive difference better than by quoting again from Mr. Wyckoff:—

The system of manufacture in Europe is entirely different from that which has grown up in this country. Judged from our point of view, the European manufacturer seems rather to be a mere contractor. He buys tram and organzine,—i.e., filling and warp,—which have been made at a separate factory. He sends this material to another establishment, a dye-house. Finally, he puts it out to weavers who have looms in their own homes. He has no factory and no machinery. Under such circumstances, it is not surprising that there is little improvement in machinery and methods from year to year. Our manufacturers have been obliged, on the contrary, to concentrate the work, so as to keep every portion of it under direct supervision. In several of our large silk mills, all the different processes are conducted under a single roof. . . . There is a marked disposition to try improvements in this country; and it is the general experience that the very best machinery, though at first far more costly, is in the end decidedly the cheapest. . . . The American system is largely a consequence of substituting machinery for hand labor.

A struggle thus seems to be going on in the silk industry between large factories and machinery, on the one hand, and household industry and manual labor, on the other. It is the same contest as that which went on in the cotton and woollen manufactures at the close of the last century and the beginning of the present, but with the conditions much more favorable to the survival of the old-fashioned system. The silk fibre is much less adapted to the complicated and rapidly moving machinery of textile manufactures than are cotton and wool. It is not surprising, after reading Mr. Wyckoff's description, to

learn that four-fifths of the looms in the city of Lyons are still hand-loom,* and that Crefeld, the chief seat of the silk manufacture in Germany, is a town of household operatives. The necessities of the situation compel the silk manufacturers of this country to attempt the substitution of machinery for hand labor and the use of more elaborate and more efficient methods. Such a change alone will enable the manufacture of an article as easily transportable as silks to hold its own side by side with the agricultural industries in which by far the greater part of our population is engaged. The endeavor shows itself not only in the concentration of the manufacture, in the invention and increasing application of labor-saving machinery, in the use of power-loom instead of hand-loom, but also in the strenuous efforts to secure raw silk of more even and uniform quality.† The preference of American manufacturers for the best grades of raw silk, and their willingness to pay good prices for it, are not the result, as one might infer from some allusions to it, of any special virtue on their part. They are due simply to the necessities of the industrial situation. The more uniform

* The United States consul at Lyons wrote in 1883 that, of 120,000 looms in that city, but 20,000 were power-loom. *Reports of the Consuls of the United States*, July, 1883, p. 77.

† "In Italy and in France there are two classes of silk produced: 'country silk,' which is reeled in households and by primitive methods; 'filature silk,' which has been reeled with skill and sedulous care in filatures. The 'country silk' is, of course, inferior, and very little of it is sent to this country, because it requires much labor to be expended on it in manufacturing processes. The factories of Europe, where labor is cheap, can use inferior silk to better advantage than is possible in America. The silk produced in China is, in the first instance, 'country silk'; and, to prepare it for this market, it has to be rereeled. The Japanese now have filatures, and send us silk equal to the best of European. In Asia, as in Europe, the coarser and inferior silks are kept at home; America gets the finest and best." Wyckoff, *Silk Goods*, p. 11.

On the same page, we are told that "reels for this purpose [rereeling] were in the first instance made here and sent to China; their use was brought about by the urgent and repeated representations of American merchants there." The large growth of Japanese shipments of silk to this country is said to be due to the intelligence and adaptability which the Japanese have shown in improving the reeling of silk.

the material, the more can machinery be used ; the greater the use of machinery, the better the chance of the American producer.

Hence we find that the various branches of the silk manufacture have been put in a firm position in proportion to the possibility of using machinery. Sewing-silk, the earliest branch and the most firmly established, is the product of American inventions. It is not surprising that machinery should be readily adapted to the comparatively simple processes of twisting several fibres together, and then winding and spooling them,— which are the essential processes in making sewing-silk and machine-silk. Another illustration of the same tendency, and a most instructive one, is in the successful manufacture of “spun-silk” goods. These are made from waste silk ; that is, from the fibres of damaged or incomplete cocoons, from those which are thrown aside as unfit for reeling in the filatures, and from the tangled waste left in the earlier operations of the silk mill. These fibres are carded and spun by methods very similar to those used for cotton, and they produce “a material of such perfect uniformity that the thread to be made from it can be produced with absolute mathematical accuracy of any required size.” The silks made from it were the original “American silks” ; they are made with abundant use of machinery ; they are cheap, durable, and good. But, unfortunately, they lack a certain lustre, an agreeable softness, and a peculiar rustling sound much prized by our better-halves. They are “hard,” as we are told. Those qualities in the fibre which make silks agreeable to their chief consumers seem to be lost in the processes of carding or rapid spinning, and spun-silk goods fail to displace the more insinuating articles which come from the reel. Yet their consumption has steadily increased. By mixture with reeled silk, and by other improvements, their quality has been made more agreeable.

They are said to be specially well adapted for silk prints, and in the production of these the characteristics of American manufactures are again illustrated. "In Europe, printing is done with little blocks, a few inches square, which are slowly and more or less imperfectly used in hand work. Here, ingenious machinery is employed, printing many colors at once. A machine for this purpose requires a special engine to drive it, in order to have it under absolutely accurate control as to speed, pressure, and registry. Patterns that cannot be perfectly matched by hand may be turned out faultlessly by such machinery."

The answers to the questions presented by our sketch of the history of the silk manufacture now suggest themselves. The nature of the silk fibre is an obstacle to that extensive use of labor-saving machinery which is characteristic of American industry. The field is not promising for the ingenuity and inventiveness which give American manufactures their distinctive advantages. The same reason, no doubt, explains why in Europe the silk manufacture has its chief seats in France and in Germany, and not in England. While England's textile manufactures have in general maintained their superiority over those of the Continent, the silk manufacture continued to call for protection long after the general policy of free trade had been entered on, and, in fact, suffered under the reduction and final repeal (1860) of duties on silks. The conditions on the Continent are more favorable to industries in which there is comparatively little use of machinery.

It may indeed happen that Yankee ingenuity will revolutionize the conditions of this industry. The attempts of the American manufacturers to get a more even supply of raw silk, and to apply machinery to its conversion into silk goods, may prove successful, if not throughout the industry, at least in many parts of it. The progress of the silk manufacture in recent years has been extraordinary.

Ten or fifteen years ago, American dress silks were hardly heard of, and such as existed were of harsh and poor quality. At present, much the larger part of the dress silks which are used are of American make, and they are inferior in quality to none but the choicest imported goods. The dress silks which continue to be imported are largely figured silks. Of such goods, no great quantity of any one piece can be made with profit; there are not likely to be many purchasers whose tastes will be hit by any particular pattern. It does not pay to make goods of this sort on the power-loom, which like all expensive machinery, is profitable only where it works continuously and turns out large quantities at a time. The hand-loom turns out less at a time, and is more easily transferred to a new pattern. Figured silks are therefore more often made in the old way, and for that reason again are largely imported. Probably the same conditions hold good, in greater or less degree, of other imported silk goods. The very finest qualities of dress goods, such as require much individual attention from the workman,—laces, some sorts of embroideries, velvets, and goods which are half silk, half cotton, or wool,—make up the greater part of the importations.* But with dress goods, as with handkerchiefs, ribbons, upholstery silks, the American manufacturers have well-nigh driven out their foreign competitors. They would continue to hold their own, even if duties were considerably reduced.

What the position of the silk manufacture might be if duties were entirely swept away, it is impossible to say. Some branches of the manufacture would probably hold their own, while others would disappear. Should there continue in the future a progress such as has un-

* I must confess that I have found no clear explanation of the continued imports of some silk goods; *e.g.*, goods of mixed materials. Possibly it is simply a matter of habit and of inexperience among domestic producers; but I suspect there is some deeper reason.

doubtedly been made in recent years in the American silk manufacture, it may happen in the end that most sorts of silks will be made here as cheaply as abroad, and that the abolition of protective duties would affect the silk manufacture as little as it would now affect the bulk of the cotton manufacture. If this proves to be the case, we shall have an example, and a striking one, of the successful application of protection to young industries. It is unlikely that any attempts at silk-making would have been made here but for the high duties of the war, and such progress as the manufacture has made may be fairly ascribed to the stimulus of protection. It remains to be seen whether this progress will be continued so far as to attain the true end of protection to young industries,—the supply of the commodity at a price below that of the foreign article. The nature of the fibre makes it improbable that there will ever be any such complete application of machinery as in the manufacture of cotton and wool; but no man can say it will not be done, for the march of invention brings many surprises. The question turns, however, on this: Unless there is continued application of machinery and continued invention of labor-saving processes, such as will make labor here more efficient than abroad, then, so long as our general economic conditions bear their present relations to those of Europe, we cannot expect the growth of a varied and independent silk manufacture.*

*Before leaving this topic, a word may be said on another explanation of the silk situation. Mr. J. Schoenhof, in his volume on *The Industrial Situation*, chapters vi. and vii., has come to the conclusion that the real cause of the continued imports of silks is to be found not in the conditions of the industry, but in the practice of adulteration by foreign manufacturers. He gives striking illustrations of the extent to which foreign silks are loaded with dyestuffs. Sometimes four-fifths of the weight of a piece of black silk is dye, and but one-fifth silk fibre. No doubt silks often are greatly adulterated, and very likely the practice has been more widely resorted to because of the desperate efforts of French and German manufacturers to keep their hold on the American market, in face of the high duty and the growing domestic manufacture.

We will now turn to the glass manufacture, which presents a set of phenomena analogous to those we have noted in the silk trade, and in some respects even clearer and simpler. Some sorts of glass are imported steadily in large quantities, notwithstanding high duties; other sorts are not imported at all, though the duties on them are comparatively low.* As a glance at the table will show, the imports of plate-glass are three or four times as large as the domestic production, although the duty is very heavy, being more than a hundred per cent. on the large sizes, which are chiefly imported. Window-glass is produced in this country in greater quantity, yet even of this the imports amount to about one-third of the total consumption. The duties are specific, like those on plate-glass, and are again very heavy, amounting to one hundred per cent. on the larger sizes and to sixty per cent. on the smaller. On the other hand, the imports of ordinary moulded and pressed glass are insignificant, while

The practice is a phase, perhaps temporary, of the struggle between the old and the new methods of manufacture. But, if unadulterated American silks really satisfy the wants of consumers, and, quality for quality, are cheaper, they will hold their own in the long run, and will conquer the market, even though the change in the direction of consumption may take place slowly in the case of an article so much affected by fashion and prejudice. If, on the other hand, foreign silks, adulteration and all, prove permanently more pleasing to the consumers, whose tastes must in the long run decide what is wanted, American manufacturers will hardly hesitate—and, in fact, do not hesitate—to resort to similar adulteration. It may be, indeed, that there is a greater possibility of adulterating successfully under European than under American methods. Mr. Wyckoff tells us that “all the processes from first to last by which an inferior article can be made to appear equal to that of a higher grade are costly in labor” (*Silk Goods*, p. 26). This is a significant circumstance, and very likely goes far to explain the alleged greater purity of American silks. On the whole, while adulteration is one of the things that must be taken into account in explaining the present situation, the fundamental explanation seems to me to lie in those conditions of the industry which were described in the text, and of which, for that matter, Mr. Schoenhof’s interesting account supplies excellent illustrations.

* The figures in the following table give the value of the product of glass-ware in the United States in 1880, as reported in the census, the value of the imports in the fiscal year 1879-80, and the rates of duty on the various sorts of

the domestic production of articles of this sort, chiefly table-ware, is enormous. The census returns of 1880 do not distinguish, as do the customs returns, between the different sorts of "glassware"; but the bulk of the large quantity of glassware produced in the country was common and inexpensive pressed glass, very little being cut or ornamented glass of an expensive sort. Yet the duty on plain glassware is only thirty-five per cent., and that on other glassware only forty per cent. The situation is much the same with glass bottles, the domestic product being large, the imports small, and the duty comparatively low.

As we might expect from these facts, the methods of production are very different for the different sorts of glass. Window-glass—to begin with an important and typical article—continues now to be made in very much the same way as in past generations, nor is there any appreciable difference between the methods of manufacture in this country and in Europe. The most important operation is that of blowing the glass. The molten material is gathered on a block of wood, and then blown into a cylindrical shape having walls of the thickness desired

glass. Where the duties are specific, as on plate and window glass, they have been reduced to an *ad valorem* equivalent for those qualities which are most largely imported. The figures indicate thousands of dollars. In comparing the imports and the domestic production, the former must of course be increased by the amount of the duties:—

	Imports.	Duty.	Value of product in U.S.
Plate-glass,	1,715	60 @ 100%	868 (a)
Window-glass,	1,427	60 @ 100%	5,047
	38	35%	
Glassware, { Plain, moulded and pressed, Cut, engraved, painted, or stained,	723	40%	9,568
Manufactures otherwise provided for,	951	40%	
Green glass (bottles),	44	35%	5,870

(a) Since 1880, the production of plate-glass has increased greatly, but the imports also have increased.

for the glass. The cylinder is then loosened from the blow-pipe, split open, flattened, annealed, polished, and cut into regular shapes. In all these operations "there has not been a single inch of progress since the day when cylinder-glass was first made." Moreover, "from the very nature of the business, it is absolutely impossible to use machinery in it. The inventive genius of the American people cannot be brought to bear effectively in making window-glass. The business has to be a pure manufacture,—manual labor."* If the processes are the same as in Europe, and the capacity and energy of the American laborers are not much greater, obviously the lower wages which the foreign manufacturer pays will enable him to offer window-glass at lower prices than his American competitor can afford. It is not surprising, therefore, that window-glass continues to be imported in face of a very high duty.

On the other hand, the manufacture of pressed glass is distinctively an American industry. "In glass-making, as in other industries, the scarcity of skilled labor drove our people to devise means for accomplishing work without its aid. We were naturally driven to machinery. To ob-

*I quote from the argument of Mr. E. L. Day, a glass manufacturer who appeared as the representative of the American Association of Window Glass Manufacturers before the Committee of Ways and Means in 1884. *Congressional Documents, House Reports*, 1883-84, pp. 256, 257. Remarks of the same tenor are in Mr. Charles Colné's excellent report on glass in *Reports of the United States Commissioners to the Paris Exhibition of 1878*, vol. iii. p. 347. Indeed, it would seem that in one respect the methods of manufacture are more advanced in Europe than in this country. The American manufacturers themselves tell us that they generally carry on their business on a smaller scale than do their foreign competitors. See Mr. Day's statement, as cited above, p. 256. Before the Tariff Commission of 1882, the spokesman of the window-glass manufacturers said that the concerns in the United States were, on the average, only one-seventh as large as in European countries, and pleaded that "the general expenses of conducting the business of such large establishments, as is well known, make an enormous difference in the cost, enough for a fair profit to the foreign manufacturer." *Tariff Commission Report of 1882*, p. 2000. It may be noted, in this connection, that the use of gas-furnaces, a great improvement in the industry, came much earlier in Europe than in this country. Colné's Report, p. 352; *Census Report of 1880 on Glass*, p. 37.

viate hand-blowing, a process which is very difficult to master, shaping with press and iron moulds was substituted. The beneficial results of this invention are incalculable. It placed our manufacturers in a position to make regular and cheap wares, while skilled labor became no longer necessary. The simplicity of the operation of pressing glass was such that in a very short time men could be trained to perform the work. . . . Then came improvements fast and thick in combinations of the different pieces of moulds,—improvements in presses, and tools for holding the pieces while being fire-polished.”* The invention of the process goes back to 1827, when the first press, for moulding tumblers, was made.† Since that time, the manufacture of flint-glass, which is chiefly table-ware made by pressing, has flourished.

Before the Civil War, no permanent success was attained along the seaboard in the manufacture of window and bottle glass. In Pittsburg and other places west of the Alleghanies, window-glass works were established at an early date. Fuel and materials were abundant; and the heavy cost of inland transportation, before the days of low railroad freights, prevented any effective competition from imported glass. Near the seaboard, however, no window-glass or bottle-glass was made.‡ The manufacture of pressed glass, on the other hand, grew and prospered. From the beginning, the United States have led all countries in this branch of the industry. Many articles which elsewhere are made by blowing and subsequent

* Colne's *Report*, as referred to above, p. 377. See also Mr. J. D. Weeks's report on glass, in the volume on manufactures in the *Census* of 1880, p. 47. Accounts of the various improvements in the pressing process are given by these writers in the passages referred to.

† Report on glass, *Census* of 1880, p. 58. Presses for simple articles seem to have been in use in England and Holland before this date. Jarves, *Reminiscences of Glass-making*, p. 93.

‡ Mr. Jarves, in his *Reminiscences*, p. 65, alludes to “the repeated failure of permanently establishing window and bottle glass works in this vicinity” (New England).

shaping with simple slow-working tools, are here made, as well or better, by pressing. So far has that process been perfected that it requires a practised eye to distinguish the best pressed glass from cut glass. Mr. Colné, in his report on the glassware exhibited at the Paris Exhibition of 1878, repeatedly commented on the superiority of American pressed glass.* It is regularly exported in considerable quantities to Canada, the West Indies, South America, and even to Europe. If our tariff system were made more liberal, the general lowering of the scale of prices which would probably ensue would no doubt cause the exports of pressed glass, as of other manufactured articles, to increase rapidly.†

The manufacture of plate-glass presents a curious case, typical of one phase of the operation of the heavy duties imposed during the Civil War. Before 1860, plate-glass was not made in this country at all. During the war, high duties were imposed on it, and properly enough; for plate-glass is as purely an article of luxury as could be found. These duties were retained after the war closed, and, like so many others, remain now substantially as they were fixed in 1864. At first, they operated simply as revenue duties. As they were retained, however, and the price of imported glass was kept high, capital was attracted to the domestic production of plate-glass. In 1869, a factory was built in Indiana, and a few years

* "The American pressed glass drew from the European manufacturers exclamations of astonishment when they saw the clearness, smoothness, and brilliancy of this glass, the freedom from mould-marks, and the superior execution in general. Frequent inquiries were made as to the mode of working. This was a positive proof that they consider us superior in that line. In fact, many manufacturers frankly acknowledged to me our uncontested superiority in pressed glass. Nothing could be seen elsewhere equalling our samples." *Report*, p. 365. Compare also p. 387 of the *Report*.

† The exports of glassware, which consisted almost exclusively of pressed glass, were \$750,000 in 1885, and \$774,000 in 1886. Mr. Colné, in his *Report*, p. 255, said that, "were it not for the difficulties created by the French tariff, American pressed glass could be exported to France with advantage."

later another was built in Missouri.* A few others have since been added, and at present a large amount of capital is sunk in them. The business is one which must be conducted on a large scale, and requires much fixed capital, in the shape of buildings, furnaces, ovens, and machinery for handling the plates. The process consists, in essentials, of casting the glass in plates, which are then ground, smoothed, and polished. The conditions seem to be somewhat different from those of manufacturing window-glass, where hand labor plays a larger part; there seems to be greater opportunity for the use of machinery. But the machinery in this country seems to be the same as that used abroad, and the skilled laborers have been brought hither from foreign countries. The conditions of production are essentially the same as in Europe; and, so long as this is the case, the lower wages paid there enable plate-glass to be put on the market at a lower price. Imports to this country therefore continue, notwithstanding our high duties. It is not impossible that American ingenuity will find in this industry a congenial field, and that improvements in methods and machinery will eventually enable plate-glass to be made here as cheaply as abroad. But, if it be true, as the manufacturers state, that they cannot submit to any reduction of the present very high rates, no steps in this direction have yet been taken. The duty so far has operated purely and simply as a protective duty.

The manufacturers assert that the price of plate-glass has been reduced by their competition. The price of plate-glass has undoubtedly gone down very much in

*See the statements made in 1884 before the Committee of Ways and Means by Mr. E. A. Hitchcock, for the Crystal Plate Glass Company of Missouri, and by Mr. W. C. DeFauw, the owner of large works at New Albany, Indiana. *House Reports*, 1883-84, pp. 279-287. Mr. Hitchcock argued with much force that, since the duties on plate-glass had remained unchanged for thirteen years preceding the date (1876) when his corporation engaged in the business, it would be a breach of faith to reduce the duties in such way as to cause the loss of their capital.

recent years ; but, since imports have continued regularly, the price here has been presumably higher throughout than the price abroad. I say "presumably," because it is also asserted that the foreign producers of plate-glass have combined ; that prices are not governed by competition and cost of production, but are fixed under conditions of monopoly ; and that lower prices are offered in the United States because of our heavy duties. No doubt it is true that, where an article is monopolized and yields unusual profits, a duty, whether it stimulates domestic production or not, may cause the foreign producer to content himself with lower prices and lower profits. Under such circumstances, it may happen that the foreign producer rather than the domestic consumer bears a part or the whole of a duty. Whether this has been the result of the duty on plate-glass is not clear. On the one hand, the foreign manufacturers are few in number, produce on a large scale, and might well combine effectually. On the other hand there are establishments in various countries,—France, Belgium, Germany, and England ; and an international combination is less likely to hold together than one between persons in the same country. Statements as to combinations abroad, when made by protected competitors here, must be received with a good deal of caution.

In the manufacture of glass bottles, the general conditions are similar to those already described for window-glass. The glass is blown. Moulds are used to some extent, but little machinery.* No doubt the characteristic differences between European and American processes show themselves in this industry. For example, the older method, still in general use abroad, was to apply a mould only for shaping the lower part of the bottle, the neck being separately shaped with pincers and forming blocks.

* "There is no machinery used in the making of bottles, nothing but hand labor is used." Statements made in 1884 before the Committee of Ways and Means, as cited above, pp. 292, 295.

Recently, metallic moulds, into which the whole bottle is blown at once, have been invented, and are in general use in this country; but in Europe the old process was still common when Mr. Colné reported on the glass manufacture in 1878.* On the whole, however, the industry does not seem to be one adapted to American methods of production. If we find, nevertheless, that few bottles are imported and many are made within the country, the explanation, no doubt, is to be found in the heavy cost of transportation, which gives what we may call a natural protection to the manufacture of articles so cheap and bulky as glass bottles. Even in earlier years, when duties were low, bottles were regularly manufactured, especially in places distant from the seaboard. Before the days of railroads, the heavy expense of inland transportation gave a stimulus to the manufacture of bottles, as well as of window-glass, at places like Pittsburg and Wheeling, which were near the sand, fuel, and other needed materials. In our own time, the expense of inland freight is still a premium to establishments in these places. The use of natural gas in recent years has given them a great advantage; and it is probable that they would now be little affected by a reduction of duties, except in their sale in the seaboard markets.

It would be possible to present many other illustrations of the principle which has been brought out in the discussion of silks and glassware. Earthenware continues to be imported into the United States, notwithstanding a very heavy duty. Under the low duties that prevailed before the Civil War (the duty was thirty per cent. under the act of 1846), only the cheapest and heaviest sorts of earthenware were made, such as stone jugs, drain-pipes, brown and yellow ware. The heavy cost of transporting these articles no doubt explains why they were not imported. Table-ware was supplied exclusively by importation.

* See that gentleman's *Report*, as cited above, pp. 353, 356.

During the Civil War, duties were raised to forty-five per cent. on plain ware and fifty per cent. on decorated; and, in the act of 1888, these rates were again increased to fifty-five and sixty per cent. respectively. Under these duties, a considerable manufacture of pottery and earthenware has developed; and, at the present time, common white ware is no longer imported. But there is still a large importation of colored ware and of all sorts of finer porcelain and china. The domestic producers of tableware supply no more than half of our consumption of china and earthenware, and most of them would probably have to go to the wall if the duties were removed.* The explanation of this state of things, strikingly in contrast with the early and assured growth of the manufacture of pressed glass, is that the potter's art has had little share in the improvements which have revolutionized so many branches of industry within the last hundred years. The potter's wheel is still the basis of the industry. The cheapening of transportation has caused the manufacture to be concentrated in larger establishments, and perhaps in fewer places, than could be found fifty or a hundred years ago; but there has been little introduction of machinery and no essential change in processes. The very mixing of the materials, which might be expected to give a good field for using power and machinery, is still done mainly by hand, attempts to use machinery having failed to hit the exact qualities wanted. Earthenware of a cheap and bulky sort is more likely to be made in large quantities of a single pattern, and affords more opportunities for using moulds, some little machinery, and labor-saving devices; it is, besides, more expensive to transport; the

*The reader will find the materials on which this sketch is based in the report on pottery in the *Reports of the United States Commissioners to the Paris Exposition of 1878*, vol. iii. pp. 190-196; an account of the pottery manufacture in *Bradstreet's*, March 6, 1886; statements of manufacturers in *Tariff Commission Report of 1882*, pp. 613, 743, 1949; and in the statements made in 1884 before the Ways and Means Committee, *House Reports*, 1883-84, pp. 241, 244.

cheaper qualities of table-ware are consequently produced in the United States under the present high duties. The finer goods, however, where each individual piece needs more attention and requires more labor, are made in England, France, Bohemia, and are imported in face of the duties. They will doubtless continue to be imported unless our industrial conditions change greatly, or the future brings forth a series of inventions that will make the industry suited to our present conditions.

The manufacture of cutlery supplies another illustration of the uneven development of industries which are on the surface closely allied. The duty on cutlery is fifty per cent., yet there is a large and regular importation of pocket-knives. On the other hand, table cutlery, subject to the same duty, is practically not imported at all. There is a slight importation of table-knives made by certain English firms, whose products a few people, from habit or prejudice, persist in preferring; but the bulk of the table-knives used are of American make, and are as cheap as goods of the same quality are abroad. The industry being concentrated in a few large establishments, there is a strong temptation to combinations; and every few years there is a combination of the American manufacturers, which advances prices, keeps them high for a while, and then goes to pieces. But the knives are made as cheaply as they are in England or other countries, and are nominally sold at prices as low. Pocket-knives and razors, however, although made to a considerable extent, cannot be made so cheaply as in England and Germany, and continue to be imported in face of the duty. The explanation is again that machinery can be applied to the one much more than to the other. Table-knives are made in large quantities of a single pattern; they have comparatively few pieces; the blades need no very careful grinding, and grinding is still done largely by hand. A pocket-knife is a more complex thing; the pieces need to be put

together by hand, they must be made to fit neatly, the blades must be carefully ground. If the various parts of a pocket-knife could be struck off by machinery, in hundreds or thousands, perfect and complete, and then easily put together, pocket-knives would doubtless be made in this country with complete success. Watches can be made after that fashion, and afford a striking example of American enterprise, ingenuity, and success. But pocket-knives need to be of numberless patterns. The jobbers and retailers, who presumably know the likings of consumers, want few knives of any one style, and want new patterns every season. Obviously, production on a small scale, with little machinery, in the German fashion, accommodates itself to such a capricious demand much more readily than the American plan of using plant, machinery, and an inflexible process.

Indeed, pocket-knives are an exceptional article. Most smaller articles of hardware seem to afford favorable opportunities for the inventive talents of American workmen and business men. All sorts of complicated articles—watches and locomotives, door-knobs, locks, hinges, house hardware and household utensils, spades, axes, agricultural implements—are not only made cheaply and successfully at home, but, in spite of the higher price of the materials of which they are made, are regularly exported in large quantities. Where a massive kind of production is called for, a huge plant, a steady routine, a rigid economy of materials, the organization rather than the saving of labor, the English in general excel. This is probably one cause of their commanding position as producers of the cruder forms of iron,—pig-iron, bar-iron, raw steel; though much is also due to the great advantage of having rich supplies of coal very near the iron ore. In manufactures of a more delicate and refined character, if I may use such adjectives in this connection, the Americans excel. Where the nature of the material or of the product gives opportunity for

the deft use of labor-saving devices, the ingenious adaptation of a tool to just the use desired, the constant application of new inventions, American manufactures are likely to hold their own, tariff or no tariff.

In the course of the reaction which has taken place in political economy in recent years, the disposition to question the merits of the classic school has extended, first and last, to about all of its doctrines. Doubts have been expressed, not only on the theory of distribution, where there was perhaps most occasion for restatement and revision, but also on the principles of international trade, which, on the whole, needed less remodelling than any other part of the classic structure. Dr. Ingram—to take an English representative of the reaction—admits Ricardo's theory of comparative costs to be "just and interesting"; but, when Cairnes describes it as "sounding the depths" of international trade, Dr. Ingram finds the phrase magniloquent.* Professor Held,† eminent and lamented among the Germans of the new school, considered the theory a curiosity in economic literature, and handled it with very scant respect; though it is but fair to add that, as is often the case with the protesting economists, his own discussion showed, in its details, less real divergence from the classic doctrine than his depreciation of it would lead us to expect. To the present writer, it seems clear that the phases of our economic history which have been examined in the preceding pages can be explained at bottom only on the theory of comparative costs, which, as he ventures to assert even at the risk of being thought magniloquent, sounds the depths of the international trade of the United States. The reason why the Amer-

* Ingram's *History of Political Economy*, p. 134.

† In the *Jahrbuch für Gesetzgebung*, iii. pp. 179-182. The essay on "Protection and Free Trade," in which the reader will find the passage here referred to, is in general sound and conservative.

ican farmer does not produce flax fibre is not to be found in any obstacles from climate or physical conditions. His labor would yield as much flax, absolutely, as that of the European cultivator. He simply finds that his labor yields more in other branches of agriculture. His case is the same with beet culture. Silks were imported before 1860 not because of any inferior productiveness of American labor in making them; it was because of a lack of that superiority which existed in other directions.

In both of these great branches of production, account must be taken of moral and intellectual as well as of physical causes of a comparative advantage. The classic economists did not often trouble themselves to analyze the causes of the differing effectiveness of labor in different countries, and perhaps reasoned too much as if these causes were all of a physical and unalterable sort. Adam Smith* shrewdly perceived that the causes of the advantages one country has over another are not all of the same kind; but he pointed out with truth that, given the advantages, they determine the course of trade. The nature and the cause of an advantage become material only when we begin to inquire whether it is likely to persist indefinitely, and whether it can be affected by legislation. Obviously, a comparative advantage which rests not on physical causes, but on differences in skill, knowledge of the arts, mechanical training, shades of character and intelligence, may be influenced, within limits, by a stimulus in the way of premium or protection. The argument for protection to young industries applies only under conditions of this latter sort. Given those condi-

*"Whether the advantages one country has over another be natural or acquired, is in this respect of no consequence. As long as the one country has those advantages, and the other wants them, it will always be more advantageous for the latter to buy of the former than to make. It is an acquired advantage only which one artificer has over his neighbor who exercises another trade; and yet they both find it more advantageous to buy of one another, than to make what does not belong to their particular trades." *Wealth of Nations*, Book IV., chap. ii.

tions, it may apply more widely than English economists have been disposed to grant. Protection to young industries, which Mill believed to be of possible advantage only in a young country in the earlier stages of growth, may have had occasional and unexpected successes even within the last twenty years. The history of the silk manufacture illustrates the possible turn of events; and the application of protection in the United States has been so sweeping since the Civil War that this case, while by no means typical of the usual effects, probably does not stand alone. But such exceptions serve here, as they do in all scientific investigations, to bring out the foundation of a general rule rather than to modify it. In the present case, they suggest a more careful analysis of the causes of comparative advantages in different countries, but do not affect the doctrine that these comparative advantages determine the sort of trade and division of labor that will take place between them. Such phenomena as have been described in the preceding pages still reduce themselves, in the last analysis, to illustrations of the doctrine of comparative costs.

F. W. TAUSSIG.

ON CERTAIN PASSAGES IN JEVONS'S "THEORY OF POLITICAL ECONOMY."

THE diagrammatic method of studying economics may be regarded from three points of view.

(i.) Many teachers find in it a stimulating and helpful appeal to the eye, and use it as a short and telling way of making statements and registering results.

(ii.) A few students treat it as a potent instrument for giving precision to hypotheses in the first instance, and then for rigorously analyzing and investigating the results that flow from them.

(iii.) A very few investigators (among whom I think we must rank Jevons) have hoped ultimately to pass beyond the field of pure hypothesis and analysis, and to build up constructive results upon empirical curves of economic phenomena established by observation.

Precision and firmness in wielding the mathematical method as a hypothetical and analytical instrument are of the first importance; for, without them, all its other uses will turn out illusory. What may be called the "picturesque" use of diagrams, to illustrate theory, is fatally misleading unless an absolutely rigorous and precise interpretation is insisted on; and empirical or hypothetical data may be seriously misinterpreted, even by experts, for want of a sufficiently close preliminary analysis of the mathematical instrument of investigation.

I propose, then, to examine certain passages in Jevons's great work, in the hope of carrying his analysis a step further inward rather than of projecting his results further outward.

(i.) "Gregory King's" estimate of the variations in the price of wheat.

The celebrated estimate of the probable effect of serious deficiencies in the wheat harvest, usually attributed to Gregory King, but perhaps due to Davenant, is made the subject of an interesting investigation by Jevons.*

The estimate itself may be put into the following form: Taking 10 as the numerical value of the normal harvest and 1 as the normal price, it is estimated that we should have the price rising to 1.8 for a harvest of 9, to 1.8 for a harvest of 8, to 2.6 for a harvest of 7, to 3.8 for a harvest of 6, and to 5.5 for a harvest of 5.

Without inquiring into the grounds of this estimate, or making himself responsible for its correctness, Jevons tries to throw it into scientific form by deducing from it a law of price as a function of quantity. Taking the ordinates to register price, and the abscissas quantity, we shall have the following data:—

$x \dots 10$	|	9	|	8	|	7	|	6	|	5
$y \dots 1$	|	1.8	|	1.8	|	2.6	|	3.8	|	5.5

Of course there are an indefinite number of possible curves that pass through the six points thus indicated, and we shall be guided in our method of attack by any conceptions we may form on general grounds as to the probable form of the curve.

Jevons (p. 170) proceeds: "It is probable that the price of corn should never sink to zero, as, if abundant, it could be used for feeding horses, poultry, and cattle, or for other purposes for which it is too costly at present. It is said that in America corn, no doubt Indian corn, has been occasionally used as fuel. On the other hand, when the quantity is much diminished, the price should rise rapidly, and should become infinite before the quantity is zero,

* *Theory of Political Economy*, second edition, pp. 167-172. I take it that the estimate refers to wheat alone. See Davenant, *Essay upon the Probable Methods of making a people gainers in the Balance of Trade*, pp. 80, 81. But in one passage wheat, barley, and rye seem to be included.

because famine would then be impending. The substitution of potatoes and other kinds of food renders the famine point very uncertain; but I think that a total deficiency of corn could not be made up by other food." These considerations lead Jevons to conjecture that the curve will be of the form $y = \frac{a}{(x-b)^n}$, and he fixes the constants

so as to get a fair approximation to the values given in the estimate. He concludes, "Considering the close approximation in the above numbers, we may safely substitute the empirical formula for [Davenant's] numbers."

Now I submit that, in the first place, the estimate, whether founded on observation or conjecture, obviously refers to wheat exclusively in its capacity as human food. Indeed, it is distinctly implied by Jevons that it is not actually used for any other purpose. If we are to consider its use as food for horses or (when burned) as manure, we shall have to take into account another curve, which will follow its own law, and will have to be added laterally to the curve we are now examining, as soon as the latter descends low enough to be affected by it.* But the fact that if wheat were cheaper people *would* buy it for horses, does not in any way, directly or indirectly, affect the price they really give, or the price they would give if the supply were *diminished*. Obviously, then, the law connecting the six points which constitute our data must be independent of such possible uses of wheat as are wholly inoperative throughout the region over which our observations (or conjectures) extend. In other words, our data belong to the curve that connects the price and the quantity of wheat *as human food*, and this curve will follow its own law independently of any other curves that may combine with it to form the total curve that gives the

* This branch of the subject is well worked out by Walras in his "*Éléments d'Économie Politique Pure*. 11^e Leçon, 30^e Leçon et *passim*. Cf. my *Alphabet of Economic Science*, p. 60.

price of wheat as a function of its quantity. Now it is clear that a comparatively small increase of the supply of wheat would actually reduce its marginal degree of utility as human food to zero; that is to say, would give every potential purchaser as much as he wanted to eat. Our curve, then, must not, as Jevons thinks, be asymptotal to the axis of x , but must cut it for a comparatively low value of x .

Again, impending famine will not make the price of wheat infinite. There is no such thing as an infinite price. Whether or not there can be an infinite *utility* is a question of some interest; and I am prepared to defend a negative answer even to that. But there can be no question at all as to the impossibility of an infinite *price*. It is a contradiction in terms. Again, a total failure of wheat, or even of grain in general, would no doubt produce famine, but not amongst the wealthy classes, and famine amongst poor people could not raise the price of corn to any very high figure: they can but offer all they have, and before the price of corn has risen many hundred per cent they will have no power to purchase it; their demand will cease to be "effective." Amongst the wealthy people and their retainers there will be no lack of meat and potatoes, vegetables, fruits, etc.; and wheat-bread, though commanding a high price, will not be purchased, in appreciable quantities, at what we are accustomed to think of as extreme famine prices, for there will be no famine amongst the purchasers, there will only be a lack of *bread* in the literal and narrow sense. I must therefore again join issue with Jevons in his second assumption; viz., that before we get back to the origin, our formula ought to give us an infinite value for y . Indeed, it is pitiable to think how slight the rise would probably have to be in order to induce incipient "famine," and how false the inference that if people are dying for want of a thing the price of that thing must be "infinite."

Divesting ourselves, then, of Jevons's preconceptions as to the general form of the curve, and reserving our own preconceptions (*viz.*, that the curve will cut both axes) to act as a check upon our results, let us look for the simplest law we can find which unites the six points. It will appear that they do not lie on a conic. The conic fixed by any five of them does not pass through the sixth. We next try a curve of the third degree. If we assume the simplest form, *viz.* :

$$y = ax^3 + bx^2 + cx + d,$$

we shall find that the curve determined by any four of the points passes through the other two.* Its formula will be

$$60y = 1500 - 374x + 33x^2 - x^3.$$

This curve cuts the axis of x between 13 and 14, and that of y at 25. These results have a *vraisemblance* which is truly remarkable when we consider how little right we have to expect such a curve as this to yield reasonable results when carried far beyond the limits of the data.

Such an outcome of our investigations can hardly fail to stimulate curiosity as to the origin of this most interesting estimate, and the grounds on which it was formed.

(ii.) Dimensions of economic quantities.

There are no portions of Professor Jevons's great work that are more difficult or (as I think) less satisfactory than the sections on the dimensions of economic quantities.

* It may be conveniently found by the method of differences. Take four points:—

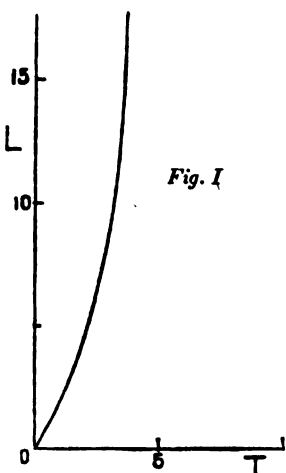
10	.	.	.	.	1				
						3			
9	.	.	.	.	13		2		
						5			
8	.	.	.	.	18		3	1	
						8			
7	.	.	.	.	26				

It will be found that the law here suggested gives the other two points with perfect accuracy. I am indebted to Mr. John Bridge, of Hampstead, for suggesting the application of this method.

The previously uninitiated (of whom I am one) will be able to gather from the works of Professor Jevons himself that the theory of dimensions has been found a powerful instrument in the investigations of natural science, and will welcome his attempt to introduce the same method into economic studies. It is of vital consequence that we should have a precise conception of our several units and their relations to each other, if the mathematical method of economic study is to make any real progress; and the careful student will very rapidly learn to recognize in the theory of dimensions a valuable means of elucidating and checking his processes and results.

But the method, as applied by Jevons, appears to fit his diagrams singularly ill; and if it is to find any harmonious development in connection with them, some better principle of co-ordination must be sought.

Perhaps I shall be excused if I introduce the subject by a simple and elementary illustration of the theory itself, derived from the field of dynamics.



If we represent graphically the space which a body, falling from rest, traverses in any given time, under the action of gravitation, we shall have a curve roughly of the form of Fig. I., in which the ordinates represent length-space (10 feet to the unit), and the abscissas time (1 second to the unit). Here the dimension of the ordinates is L , or length, and that of the abscissas is T , or time. The *number* of the units contained in any ordinate is connected by a definite law with the *number* of the units

contained in the corresponding abscissa ($s = 16t^2$, in feet and seconds), but the *nature* of the units in either case

is entirely distinct. Thus the interpretation of an ordinate of a given length (when once obtained) is independent of the unit of time, because T does not enter as a dimension into the ordinates; but if I call a certain ordinate 10 when the unit of length is a foot, I must call it 120 if I change the unit to an inch. Again, if I call a certain abscissa 10 when the unit of time is a second, I must call it $\frac{1}{60} = \frac{1}{60}$ when the unit of time is a minute. Thus the numerical expression for any quantity of one positive dimension must be increased when the unit of its dimensions is decreased, and decreased when it is increased.

Let us now, treating the number of seconds in the formula $s = 16t^2$ as the variable, and the feet traversed as the function, differentiate the latter to the former. That is to say, let us find the *rate* at which increments of time are increasing the space traversed, at any point in the course of the body; or, in other words, let us find the formula, and the curve, which will give us the *rate* at which the body is falling, as a function of the time it has been in motion.

The formula, of course, will be $v = 32t$, and the curve is given roughly in Fig. II. Here the unit by which the abscissas are measured is the same as before. Their dimension is T . But the unit of the ordinates is no longer a unit of length. It is a unit of *rate*. An ordinate does not now represent feet, but feet-per-second. The unit of the new ordinates, then, is a unit of ratio between length and time, each measured in its own appropriate unit. Both L and T must therefore enter into the new ordinates as dimensions; but they do not enter upon the same footing.

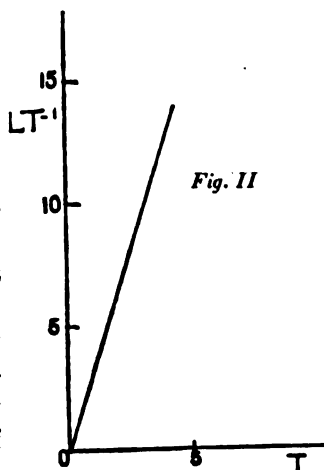


Fig. II

the velocity of a body, in each second, it is adding 16 feet per half-second, in each second, and 8 feet per half-second in each half-second. The new unit being half the old unit, the numerical expression for acceleration must be altered in the proportion of $(\frac{1}{2})^2:1^2$; i.e., must be divided by 4.

Now note further that in these successive figures an *area* in one always represents the same kind of quantity, and has the same dimensions, as the *ordinate* of its predecessor.

Thus on Fig. III. if we take the area above the abscissa 2, or $\int_0^2 f''(x) \cdot dx$, we shall, of course, have a quantity of the dimensions $LT^{-1}T$, or LT^{-1} ; i.e., a velocity. But the ordinates on Fig. II. are velocities. If, again, we take the area above the abscissa 2 in Fig. II., or $\int_0^2 f'(x) \cdot dx$, we shall have a quantity of dimensions $LT^{-1}T$, or L ; i.e., a length. But the ordinates on Fig. I. represent lengths.

It follows that there is no natural or inherent propriety in representing each actual dimension of the quantity we may be dealing with, by a dimension of space in a diagram, for we have seen that length and velocity may either of them be represented with equal propriety by a line or an area. In the same way area or volume itself may often be suitably represented by a line in a diagram. Again, there is no impropriety or inconvenience in making diagrams in which the same dimension enters positively or negatively into two or more axes. Thus, in our Fig. II., T enters positively into the abscissas and negatively into the ordinates.

An apparent neglect of these considerations, which I am not able satisfactorily to explain, has, if I am not mistaken, introduced needless difficulty and obscurity into Jevons's investigations of the dimensions of economic quantities, and has robbed his results of lucidity, if it has not led him into positive error.

Instead of criticising in detail the passages in the *Theory of Political Economy*, in which this subject is treated, I will go over the ground which they cover, and ask the reader to compare my statements with those of Jevons.

We will begin with total utility. If we use capitals for dimensions and minuscules for the number of units (*e.g.*, T for the dimension time, and t for the number of seconds or other units of time), we may indicate the units of total utility resulting from any consumption of commodity by u , and the number of units in the corresponding amount of commodity by q . The fundamental quantitative fact with which Economics have to deal may then be expressed in the thesis that u is always a function of q .

Now Jevons shows that, q being the variable, the final degree of utility of a commodity is the differential coefficient to q of its total utility; whence it follows that, taking U as the dimension of total utility, and Q as the dimension of commodity, we shall have the dimensions of final degree of utility UQ^{-1} .

Jevons uses the symbol U to signify final degree of utility (*cf.* Jevons, p. 71), but I think this notation is calculated to mislead. I should suggest that when we wish to speak of final degree of utility without entering upon the analysis or history of the conception, we should indicate the number of units by v , and the dimension by V .

In comparing my formulæ with Jevons's, therefore, it must be borne in mind that his u corresponds to mine; his U as a dimension corresponds to my V or UQ^{-1} ; his U as a quantity to my v , which will be the differential coefficient of u to the variable q .*

* In substituting Q for M , I follow the indications of Jevons himself. Preface to 2d edition, p. xi. On page 71 Jevons appears to use contradictory and inconsistent language with regard to "intensity of feeling," which he identifies in one place with "degree of utility" and more correctly defines two lines above as total instantaneous utility. The former of these quantities has the dimensions UQ^{-1} , the latter $UQ^{-1}QT^{-1}$, or UT^{-1} . *Vide infra*, I am indebted to Mr. W. E. Johnson, of King's College, Cambridge, for the elucidation of this point.

Now final degree of utility determines exchange value, and we have: Exchange value determined by v (of dimensions UQ^{-1}); that is, by *rate at which increments of commodity are increasing total advantage derived from consumption*. In this sense the dimensions of "value in exchange" may be said to be UQ^{-1} .

Jevons prefers to regard total utility as a quantity of two dimensions, MU , corresponding to my QV , and final degree of utility as a quantity of one dimension, U , corresponding to my V . If we adopt this view, it would be proper to make final degree of utility our starting-point, and begin with v as a function of q . We should then *integrate* to obtain u , of dimensions QV . My objection to this is twofold; for total utility is susceptible of direct measurement by any standard of effort or endurance that may be selected (such as foot-tons of work done under assigned conditions), whereas final degree of utility* is essentially a (limiting) *ratio*, and is therefore appropriately represented (like all ratios) as having two dimensions (whether simple or complex, homogeneous or heterogeneous) which enter the one positively and the other negatively.

Thus, if we say with Jevons that total utility has two dimensions, MU (our QV), we must, I think, add that one of these dimensions, U (our V), is a ratio, and not properly a dimension at all. In our notation it is equivalent to UQ^{-1} , and the dimensions QUQ^{-1} reduce to U .

In my view, it does not at all follow from this that there is any impropriety in representing total utility diagrammatically by area.† We shall do so whenever we

* It must be remembered that when we speak of the direct measurement of final degrees of utility or value it is not really these quantities we are measuring, but the product of final degree of utility into a small increment of commodity. It is not $\frac{du}{dq}$, but $\frac{du}{dq} \cdot dq$ or du ; i.e., a small increment, of dimension U , which we measure.

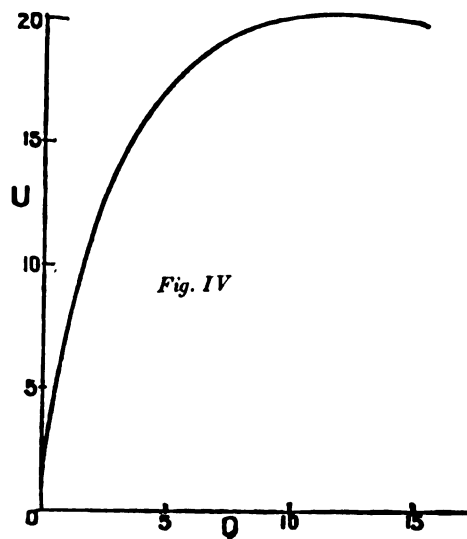
† Mr. Johnson informs me that writers on the Newtonian dynamics habitually represent linear space by area in their diagrams. This is obviously convenient.

draw curves of quantity and final degree of utility. The dimensions of abscissas will be Q , of ordinates UQ^{-1} , and of areas QUQ^{-1} , or U .

But Jevons points out that as a matter of fact it is not supply but rate of supply per unit of time, not total enjoyment but rate of enjoyment, with which we are concerned. Whether this is universally true in any fruitful and manageable sense or not, it is certainly true of all such commodities as food, water, etc. We must therefore take up the question again from this point of view. Regarding rate of supply per unit of time (dimensions QT^{-1}) as the variable, and rate of enjoyment, relief, or advantage per unit of time (dimensions UT^{-1}) as the function, and then differentiating, we shall find that the dimensions T cancel each other, and we have $UT^{-1}Q^{-1}T$, or UQ^{-1} again, as the dimension of the *rate at which increase in rate of supply increases rate of enjoyment*.

And it is, in truth, sufficiently plain that this *rate* is a direct relation between the quantity of the commodity and the enjoyment it causes, and is not affected in its numerical expression by any change in the unit of time.

These results are summarized on Figs. IV.-VII.: in Fig. IV. we have dimension of abscissa Q , and



dimension of ordinate U ; in Fig. V. of abscissa Q , of ordinate UQ^{-1} , of area U ; in Fig. VI. of abscissa QT^{-1} ,

of ordinate UT^{-1} ; in Fig. VII. of abscissa QT^{-1} , of ordinate UQ^{-1} , of area UT^{-1} ; where the areas in Figs. V. and VII. have the same dimensions, respectively, as the ordinates in Figs. IV. and VI.

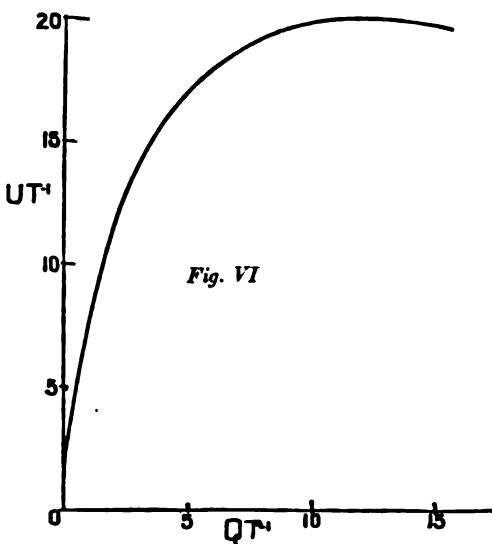
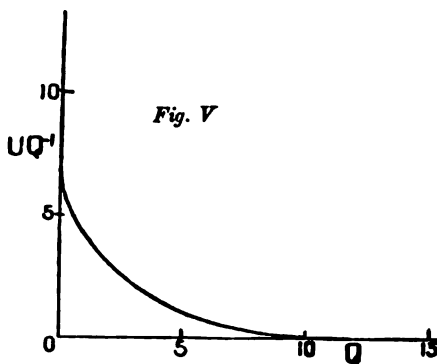
If we wished to represent, with the aid of Fig. VII., the total advantage derived from the consumption of a given quantity of commod-

ity at the rate indicated, we should have to add a third axis perpendicular to the plane of the figure, on which

to measure the time during which the rate of enjoyment represented by the area is maintained. Neither of Jevons's objections to this method are valid.

There is no reason why an economic quantity of one or of two dimensions should not be represented by a

figure of three dimensions; and there is no objection to introducing time positively on one axis and negatively on another.



It should be observed that this method renders a perfect account of the fact that (under ordinary circumstances, and with due limitations) we must hold that the

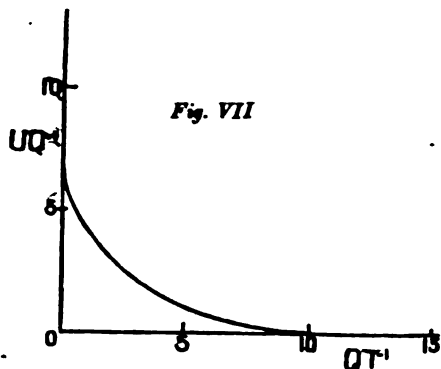


Fig. VII

same amount of commodity yields a larger sum of satisfaction when consumed slowly than when consumed fast. The result of slackening the rate of supply would be to shorten the abscissas in Figs. VI. and VII., and proportionately to

lengthen the perpendicular time-axis in the solid figure built on Fig. VII. This would obviously increase the volume of the solid that represents the total utility.

Such a figure would represent all the quantities with which we have to deal. Rate of supply on the axis of X , dimensions QT^{-1} ; final degree of utility on axis of Y , dimensions UQ^{-1} ; time on perpendicular axis of Z , dimension T ; rate of enjoyment on area of plane figure, dimensions $QT^{-1}UQ^{-1}$, or UT^{-1} ; total enjoyment on volume of solid figure, dimensions $QT^{-1}UQ^{-1}T$, or U ; total supply on rectangle between axis of X and axis of Z , dimensions $QT^{-1}T$, or Q .

Of these quantities, the rate of supply and the final degree of utility are the most important, and these are the most easily read on the figure.

We have now considered the case of absolute quantity of commodity yielding absolute quantity of enjoyment, and also the case of rate of supply of commodity yielding rate of enjoyment; but there is a third and equally important case, in which absolute quantity of commodity yields rate of enjoyment. Thus we are accustomed to think

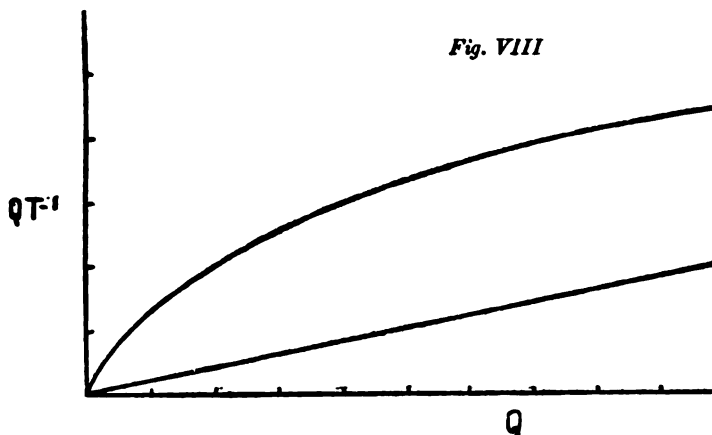
of furnished apartments as yielding so much advantage per week, month, or year, not as yielding a certain total advantage. The correctness, or at any rate the completeness, of this view may well be questioned, but in the case of imperishable articles, such as diamonds, it is difficult to regard the variable and function in any other light than that of absolute quantity and rate of advantage.

In the first place, then, we shall measure quantity of commodity, as the variable, along the axis of X , with dimension Q , and rate of enjoyment, as the function along the axis of Y , with dimensions UT^{-1} . Differentiating, we shall get the rate at which increments of commodity are increasing the rate of enjoyment, as a function of q with dimensions $UT^{-1}Q^{-1}$. This is not final degree of utility (dimensions UQ^{-1}), but a ratio between this quantity and time; and it is the measure, not of *value* and thence of *price*, but of *value-per-unit-of-time* and thence of *hire*.*

Obviously the problem of interest, or hire of capital, must fall under this general case. Capital is a commodity and is measured in absolute units, whereas the advantage of capital is a periodic yield and is measured by a ratio between time and commodity. The peculiarity of the case is that here the advantage itself consists in the obtaining of commodity, so that the dimension U will itself be Q . Thus in the case of capital the dimensions of hire $UT^{-1}Q^{-1}$ become $QT^{-1}Q^{-1}$, or T^{-1} . This must be the dimension of hire of capital (that is to say, of interest) considered as a rate; and we shall see presently that an independent investigation of the phenomena of interest leads to the same conclusion.

*Both price and hire to be understood as *per unit of commodity*. To establish a relation between hire and price, we must suppose the purchaser's estimate of distant enjoyment to be affected by uncertainty, or some other quality inherent in remoteness, in such a way as to make the successive anticipated yields of successive increments of time a convergent series. Price will then be the integral of dt . (hire), and will have the dimensions of hire and time; viz., $UT^{-1}Q^{-1}T$, or UQ^{-1} , as before.

or other periodic wear, as a function of c . We have next to examine the productiveness of the capital; i.e., the number of units of commodity, per annum or other unit

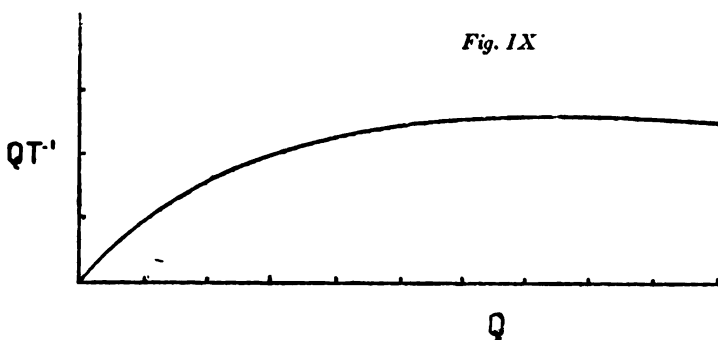


of time, which the use of the capital enables the fixed application of labor to produce. In estimating this we must subtract all the commodity which the capital actually consumes, such as coal, oil, etc. (supposing the capital to be in the shape of machinery).^{*} We may take p as the amount of commodity which c enables the fixed application of labor to produce (over and above what c itself consumes) every year, or other period of time. Its dimensions will be QT^{-1} . Then $p\tau$ will be total amount of commodity produced in the time τ in virtue of the use of c . And if we put q for $p\tau$ then the *annual* product, or p , may be written $\frac{q}{\tau}$. Its dimensions will be the same as those of $\frac{c}{\tau}$; viz., QT^{-1} .

As the capital increases in amount, its annual yield, $\frac{q}{\tau}$, will at first increase rapidly, but after a time (the application of labor being fixed) increase in the amount of capital

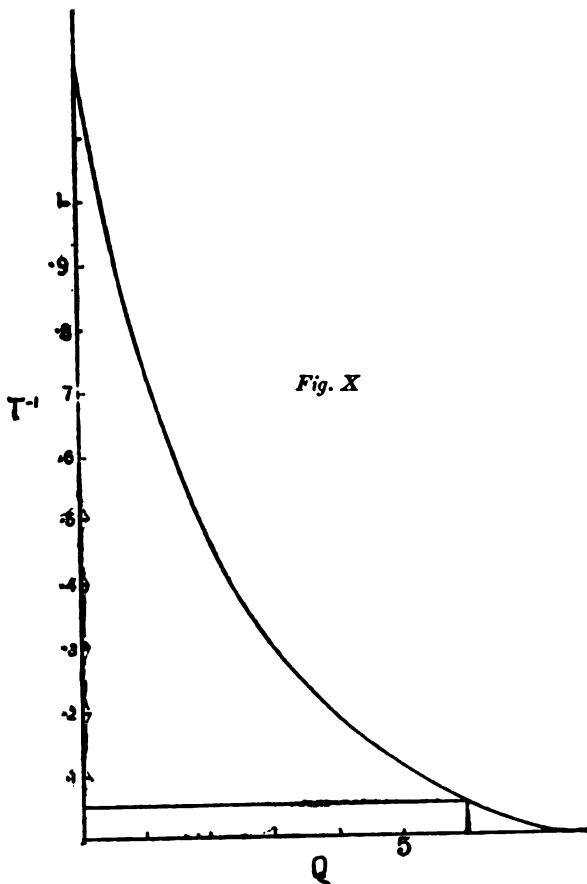
^{*} I assume the existence of a common measure of all "commodities."

will but slightly increase the annual yield (since the labor is already supplied with its most urgently required aids), and at last, when the point has been reached at which the labor has all possible aids and is applied at the greatest possible advantage, further increments of capital will not increase the annual product at all. This quantity, $\frac{Q}{\tau}$, having the same dimensions as $\frac{c}{\tau}$ may be shown on the ordinates of the same figure. It is given, hypothetically, on the upper curve of Fig. VIII., as a function of c . This *gross* productiveness of c , as we have seen, reaches a maximum, or at any rate has a limit; but long before it reaches it, the *net* productiveness of c will have passed its maximum and will be tending to zero; for we must remember that as c increases, the annual waste of c also increases without limit, and since this annual waste must be made good, the *net* productiveness of c is represented by $\frac{Q}{\tau} - \frac{c}{\tau}$ (i.e., annual yield of capital minus annual waste of capital) in the figure the length of the intercept between the two curves. Now this quantity, $\frac{Q-c}{\tau}$, is itself a function of c , and has the dimensions QT^{-1} . It is represented in Fig. IX.



If we now proceed to differentiate, to the variable c , we are in danger of having to deal with ordinates so small

as to defeat the object of diagrammatic illustration; but this may be averted by the familiar artifice of lengthening the scale on the axis of Y . We will therefore represent the unit of Q by the same length as before on the axis



of X , and by a length ten times as great on the axis of Y . We shall then have a curve such as that of Fig. X., which will show us the *rate at which increments of capital are increasing the annual return made by the capital.*

Now we have seen that the rate of hire of anything follows the ordinary laws of final degree of utility, and is determined by the rate of productiveness (in satisfaction or commodity) of the *last increment* of the thing hired. That is to say, if c is the quantity of capital and $f(c)$, in Fig. IX., the net periodical productiveness of c , then $f'(c)$, in Fig. X., will be the *rate of hire* of capital; i.e., the *rate of interest*.

This quantity is a ratio between rate-of-supply-of-commodity (yield) and commodity (capital), and its dimensions therefore are $QT^{-1}Q^{-1}$, or T^{-1} ; and Jevons has shown, with great care and elaborateness, that T^{-1} is in truth the dimension of rate of interest (*Theory*, etc., pp. 268 sq.). In fact, the length of any ordinate in Fig. X. shows, in numerical units, without dimension, the *ratio* between the increase of the capital and the increase of the periodical yield or product. For $x = 5\frac{1}{2}$ it is one-tenth, or ten per cent; for $x = 6\frac{1}{2}$ it is one-twentieth, or five per cent. All that we need to know more is the *length of the period*, for which the periodic yield has been estimated. That is to say, the only dimension of rate of productiveness, or rate of interest, is T^{-1} . The numerical expression of a given rate of interest is only affected by a change in the unit of time, not by a change in the unit of commodity.

Proceeding, then, with the examination of Fig. X., we find that $f'(c) \cdot c$ is the actual sum periodically paid as interest; $\int_0^c f'(c) \cdot dc$, or the total curvilinear area over c , the total net periodical yield of the given application of labor, backed by the quantity c of capital, and

$$\int_0^c f'(c) \cdot dc - f'(c) \cdot c,$$

or the curvilinear area over the rectangle of interest, the periodical return to the application of labor over and above the sum paid in interest. All these quantities have the dimensions QT^{-1} , and are periodical. To get

the absolute sum of any one of them during a defined period τ , we should have to multiply by τ and reduce the dimensions to $QT^{-1}T$, or Q . This would involve a third axis, registering positively the dimension T , which appears negatively on the axis of Y . What are the grounds of Jevons's objection to this I have not been able to discover, and I am wholly unable to defend his position (*cf. Theory*, pp. 72 *sq.*).

If the view now set forth is correct, no great importance can be attached to the paragraph on pp. 266, 267 of the *Theory*, in which Jevons seeks a "general expression for the rate of interest." His fundamental hypothesis that the produce for the same amount of labor may reasonably be regarded as a continuous function of the time elapsing between the expenditure of the labor and the enjoyment of the result is not based upon a typical case of the use of capital, and in the cases to which it does apply it deals with derivative, not with primary facts and phenomena. The typical case of the use of capital is that in which the result is yielded continuously. All the great staple industries need a continuous renewal and expansion of capital, which capital, as it is invested, forthwith begins to yield a continuous product. This I take to be the primary and norm-giving fact. If, by way of exception, an investment of capital is proposed which will, after an interval, yield not a revenue, but an absolute utility; or if, as is extremely common, a gradual investment of capital is proposed, with the expectation that when the investment is complete the whole invested capital (in the shape of a ship or a machine, for instance) will be purchased by some one who has performed the process of integration indicated in the note on p. 18; or, lastly, if an immediate investment of capital is proposed in order that after an interval a periodic yield may be enjoyed by the investor,—in all these cases the investor has to consider what quantity of commodity he would command at

the expiration of the given time, had he invested at first in one of the staple industries, and then continuously reinvested his continuously accruing return in the same industry again. If the proposed investment does not promise equal advantages, he will not enter upon it. Thus the basis of the estimate in every case of *deferred result* must be sought in the rate of *immediate yield* (*cf. Theory*, pp. 66-74, 90-91, 266-280).

In these notes I have made no attempt to carry the theory of capital and interest beyond the point at which Jevons left it. Very much remains to be done in this field, but my present object is only to clear away certain difficulties and rearrange the results already obtained, in order that the ground from which we are to advance may be better and more firmly occupied.

As an exercise we might trace the effect of any process which would make capital more durable. This would increase τ , and so lower the curve of wear in Fig. VIII. But it probably would not lower the curve of productiveness, since it would increase the numerator as well as the denominator of the formula that gives the ordinate, and that, too, in something like the same proportion. Hence the ordinates of Fig. IX. will be lengthened, and so will those of Fig. X. The immediate effect, therefore, if we could imagine the phenomenon taking place suddenly and simultaneously everywhere, would be to raise the rate of interest. But the increased net production would tend to increase accumulation, and so c would increase, and $f(c)$ and $f'(c)$ would decline again.

PHILIP H. WICKSTEED.

CO-OPERATIVE SAVINGS AND LOAN ASSOCIATIONS.

THE class of associations discussed in this article are known by many names. Among them are Co-operative Savings and Loan Associations, Co-operative Banks, Building Associations, Building and Loan Associations, Mutual Loan Associations, Homestead Aid Associations, and others. There is no name which so accurately describes them all as Co-operative Savings and Loan Associations, and no form of direct co-operation among the wage-earners of the United States is attracting more attention at the present time than the various associations grouped under this name. Such attention is not confined to those directly interested in organizing and conducting them, or to wage-earners, but is shared by social science associations and by many philanthropic men, who are deeply interested in every movement which seems to present safe and practical methods for improving the material welfare of the wage-earning classes.

While an examination of these associations throughout the country reveals many and important variations in the manner of conducting their business, the general plan of their organization and business methods is quite uniform, and may be briefly described as follows:—

1. They are corporations organized under a general act of the State authorizing their formation.

2. Every member of an association is a stockholder, and becomes such by subscribing for one or more shares of stock, signing the articles of association and by-laws, and paying an entrance-fee. He has thereby undertaken to pay to the association, upon each share of stock taken by him, at regular stated times, a certain sum called "dues,"

be paid by the borrower in excess of interest is called a "premium." The borrower pays interest on his loan at stated times corresponding with the same times that he pays dues on his stock.

6. Shares of stock upon which the holder has made a loan are called "borrowed" or "pledged" shares, while shares not borrowed upon are called "free" or "unpledged" shares.

The holder of free shares may surrender them to the association at any time upon thirty days' notice and withdraw his accumulations of savings, the association retaining a certain percentage of the profits, which have been added to their value in dividends; or he may sell them to another person, and such person, upon signing the articles of association and by-laws and procuring a transfer of the stock to himself upon the books of the association and paying a certain transfer-fee, becomes a shareholder in his stead.

The sum which the association pays upon each share withdrawn is called its "withdrawal" value.

7. The borrowing shareholder continues to pay dues upon the stock borrowed upon with his interest until the shares reach their matured value, when they cancel his loan, and he surrenders the stock, and the association discharges his securities.

He may, however, repay his loan at any time, and again hold his shares free; or he may have their withdrawal value applied upon the loan, and pay the balance and surrender his stock. A fine is imposed in all cases when a default is made in the payment of interest or dues.

8. The profits of the association are derived from interest and premium on loans, from the share of profits left by withdrawing shareholders, from fines, entrance and transfer fees. These are distributed annually or oftener, after expenses are deducted, in dividends added to the value of the shares of stock, each share of unmatured

stock receiving a dividend in amount bearing the same proportion to the total sum distributed that the value of the share bears to the total value of all the shares to which the distribution is made.

The important differences among associations in the manner of conducting their business are as follows:—

1. In the manner of issuing their stock. Some issue only one series. A person taking stock in this class of associations after the time of the first issue is required at the time he takes his shares to pay a sum equivalent to the sum of the accrued dues and the profits which have been added to the stock prior to his becoming a shareholder, so that every share of stock outstanding, and not in arrears for dues, at any time in the history of the association is of the same value. When the shares reach their matured value, every shareholder has become a borrower to the extent of the matured value of his shares. The value of his stock cancels his loan, and the association dissolves. This is called the *terminating* plan. This was the plan usually followed until recent years. Another plan, which is the one quite generally adopted at the present time, is to issue a new series of stock yearly or oftener. This is called the *serial* plan, and under it the association may become perpetual. There is still another plan called the *permanent*, in which stock is issued at any time.

2. The second important variation relates to the matured value of shares, the amount and time of paying dues, and the manner of payment. The matured value of shares ranges all the way from \$10 to \$500. The most common amounts are \$100 and \$200. Dues are paid weekly or monthly, and vary in amount from ten cents weekly to two dollars monthly on each share. The most common amounts are twenty-five cents weekly and one dollar monthly. Payments are usually required weekly or monthly. One class of associations require all dues

and interest to be paid to a committee of the Board of Directors at the stated meetings, while another class allow them to be paid to the secretary at his office before the stated weekly or monthly meetings.

3. The third important variation is in the modes in which the borrower bids and pays a premium.

(a) One mode is for the borrower to bid a certain sum per share, the amount being deducted from the loan, and the security being given for the full matured value of the shares borrowed upon, with interest; but, in the event the borrower pays the loan before the shares borrowed upon shall mature, certain rebates upon the premium so bid and paid are allowed to him. This is known as the "gross plan."

(b) A second mode is for the borrower to bid a certain sum per share, as in the gross plan, and to receive a rebate on the premium paid in the same manner in case of prepayment of loan; but he only pays interest on the net sum received after deducting the premium. This is called the "net plan." Very few associations pursue this plan at the present time.

(c) A third mode is for the borrower to bid a certain sum per share, which he will pay monthly or weekly, as the scheme of the association requires, in addition to interest. This is known as the "instalment plan."

(d) A fourth mode is for the borrower to bid on the rate of interest he will pay for the loan. This is named the "interest premium plan."

(e) A fifth mode is for the borrower to bid a certain sum per share in the event of competition among borrowers, the amount being deducted from the sum loaned and security being given for the full amount, as in the gross plan; but no rebates are allowed on prepayment of the loan. The premium bid and paid is treated as a bonus, and the whole matter of premium on the loan is ended when the loan is perfected. This has been named

the "New York premium plan," by reason of its incorporation in an act passed in that State in 1887. It is, in fact, the gross plan without the system of rebates, whereby certain parts of the premium bid by the borrower are returned to him in the event of his paying his loan before the maturity of the shares borrowed upon.

There are other minor variations, but it is unnecessary to describe them for the purposes of this article.

The first association in this country was organized in a suburb of Philadelphia in January, 1881, and named the "Oxford Provident Building Association." It was formed upon the terminating plan, matured value of shares \$500 and monthly dues \$3. Its stock matured in June, 1841, and the association closed. Another association was immediately formed under the same name. A second association was formed in 1845, and called the "Franklin Building Association." It placed the matured value of its shares at \$200, and monthly dues \$1. This was the model after which associations thereafter in Philadelphia were largely patterned. The first general act authorizing their incorporation in Pennsylvania was passed in April, 1850, and limited the number of shares of stock to 500. In April, 1851, this limit was increased to 2,500. The matured value of shares was placed at \$200, and monthly dues at \$1. The limitation in the number of shares remained in the laws of Pennsylvania until 1874.

It is estimated that about fifty associations were formed in Philadelphia from 1845 to 1850; but they were unincorporated, conducting their business through trustees, except that in a few associations special acts of incorporation were obtained from the legislature. Their numbers increased during the decade of the fifties, and they spread to some extent throughout the State. The Civil War retarded their growth for a time; but after its close their number in the whole State began to increase with great

rapidity, and their prosperity has continued until the present time. The increase in numbers was greatest from 1870 to 1880, and the total number of associations in the early years of the present decade was undoubtedly greater than at the present time. It was variously estimated from 1,500 to 1,800. The decrease in numbers in recent years is owing to two causes.

1. Prior to 1874, all the associations formed were limited to 2,500 shares, whether formed upon the terminating or serial plan. This necessarily limited the membership of a single association within comparatively narrow boundaries. In 1874, the law was changed by striking out the limit as to the number of shares, and providing that the aggregate capital of an association should not exceed one million dollars. This permitted a single association to transact an amount of business that required several before the amendment of the law. The result has been an increase in the membership of single associations.

2. Many of the associations, still in existence in 1880, were formed upon the terminating plan, and have matured their stock and dissolved. The Secretary of Internal Affairs of Pennsylvania, in his report for 1879-80, in speaking of these associations, said:—

Hundreds of these associations have been conducted, from their inception to their termination, without the loss of a dollar. From their inception up to the present time, it is estimated that under their operation 60,000 comfortable houses have been erected in Philadelphia alone, and that they have enabled 25,000 householders to pay off mortgages that probably would otherwise have been foreclosed. They have been the means of making 80,000 owners of real estate and 80,000 tax-payers, thus giving Philadelphia the pre-eminent title of being the "city of homes."

M. J. Brown, publisher of the *Building Association and Home Journal* of Philadelphia, than whom there is no one better qualified to judge, estimates the present number in the State at 900, of which one-half are located in Philadel-

phia. For the purpose of determining the amount of capital invested in these associations in Philadelphia and throughout the State, he made an examination of the accounts of one hundred and twenty associations, and found their aggregate capital to be \$8,749,337; average capital, \$72,911; aggregate shares, 151,680; average shares, 1,264. Applying this ratio to the four hundred and fifty Philadelphia associations, their aggregate capital amounts to \$82,810,017, and in the whole State to over \$65,000,000. Applying the average of the number of shares in each of the one hundred and twenty associations examined to the nine hundred in the State, the total number of shares amounts to 1,400,000. Upon each of these shares there is paid in dues every year \$12, making the total savings paid into these associations in the State of Pennsylvania, in a single year, \$17,251,200.

We have dwelt upon the details of these associations in Philadelphia at some length, for the reason that here was their beginning in this country, and here they have achieved their greatest success. Why they have been so successful we will explain after noting briefly their history in other States.

Their early history in New York is worthy of study. Some voluntary associations were formed during 1849-50, but the first general act for their incorporation was passed in 1851. This act was general in its provisions, and outlined no definite plan for conducting their business. Under its authority, seventy-two associations were incorporated in the city of New York between May 26, 1851, and November 26, 1852. During this time, commercial activity and speculation were at high tide. The organizers explained to the ignorant and unwary promising schemes whereby homes were to be paid for in an easy manner. Infatuated with the speculative rage of the times, the enthusiastic borrower expected his real estate to double or treble in value while he was paying for it;

and under this stimulus he was in a mood to bid a high premium, that he might borrow the funds of the association. The tide in commercial affairs soon changed, hard times followed, the dues and large interest could not be met, fines accumulated, and the borrowers found themselves in a net from which they could not escape. Murmurs of discontent, the menace of impending disaster, and charges of deception and fraud supplanted confidence, hope, and expectation; and the legislature was importuned for relief. In the winter of 1855, it appointed a committee of investigation to report in 1856. The committee made a full investigation, and reported in January, 1856, in favor of the repeal of the act of 1851, authorizing their incorporation.* The recommendations of the committee were not adopted; but building associations in New York City soon died out, not to reappear until 1885. Since that time there has been a rapid revival of interest and increase in numbers, until at the present time there are over sixty associations in New York, Kings, and Westchester Counties. The present movement has been attended with some of the characteristics of 1851-52; but the associations are adopting better methods, and there is a growing tendency to place them upon secure foundations.

While the craze was proceeding in New York City in 1851-52, some associations were organized in other parts of the State with much the same outcome. At the present time, the greatest success in the State of New York has been attained in the cities of Buffalo and Rochester. The first association in Buffalo was formed in 1851, the second in 1860, the third in 1869, and during that year eighteen were organized. Since that time, they have been gradually increasing. The total number organized in that city prior to November 22, 1888, was three hundred and twenty-seven. The greater part of these have

* See vol. III. *Assembly Documents for 1856*, No 46.

ceased, from the maturing of their stock or by uniting with other associations, so that the number now in active operation is estimated at one hundred. Their early experience in Rochester was unsatisfactory; but their revival there commenced in the latter part of the seventy decade, and since 1882 they have increased with astonishing rapidity for a city of its size, and they now number over eighty-five. Throughout the whole State, at the present time, there are nearly three hundred associations. A State league has been formed; and there is an increasing amount of intelligent discussion as to the best methods of conducting their business to secure safety and a steady increase of the amount of savings which they annually accumulate. One of the best acts authorizing their incorporation to be found in any State of the Union was passed by the legislature of New York in 1887, and is known as "Chapter 556." This act gives them the name of "Co-operative Savings and Loan Associations," and outlines a definite plan for conducting their business; but the act of 1851 still remains unrepealed, and new associations may be incorporated under either act.

Their early history in Connecticut was unsatisfactory, and resulted in an investigation by the legislature and a repeal of the law authorizing their formation, which closed their existence in the State until recently.

In Massachusetts, their early endeavors did not meet the expectations of those connected with them. The first was organized in Boston, in 1852. In 1859 there were at least fifty-nine in the State; but in 1866 reports by State officers reveal only three in existence. Their revival began about 1877. Hon. Josiah Quincy became interested in this form of co-operation, and believed these associations could be utilized to great advantage as a "savings institution," if organized upon sound principles and conducted by safe and equitable methods. Under his guidance, an act was prepared by a Philadelphia ex-

pert, to authorize their incorporation, and outlining a definite plan for conducting their business. This act was passed in 1877. By this act, they were called "Co-operative Saving Fund and Loan Associations." In 1883, the legislature amended the act by changing the name to "Co-operative Banks." No association of this kind can do business in the State unless incorporated under this law. This necessitates substantial uniformity in their operations. The matured value of shares is \$200, issued in quarter, semi-yearly, or yearly series, the monthly dues being \$1. In the act of 1877, the instalment plan of premiums was adopted; but since then the act has been amended, allowing each bank to decide for itself whether it will adopt that plan or the interest premium plan. "The Pioneer" of Boston was the first association organized under the act, July 26, 1877. From that time to this, these associations have from year to year been increasingly prosperous and successful. They are under the supervision of the Commissioners of Savings Banks. From the report of that Board for 1888, we learn that on the first day of November last there were in the State sixty-six co-operative banks, located in forty-seven cities and villages, having in force 184,598 shares, distributed among 27,948 shareholders. The total accumulated savings amounted to \$5,505,112, showing an increase over 1887 of \$1,298,168. While the number of shares in force has steadily increased from year to year, if it be assumed that they will remain at the above figure of 184,598 during the present year, there will be paid into these banks, savings, in the form of dues, in 1889, amounting to over \$2,200,000. Massachusetts, in the wisdom of its legislation relating to these associations, outranks any other State in the Union.

The proper limits of this article will not allow us to enter into the history of the success or failure of these associations in other States, except in a very general way.

At the present time, they are successful and rapidly increasing in New Jersey, numbering about two hundred and forty, with accumulated savings of over \$10,000,000.

The first association in Maryland was formed in Baltimore in 1846. They have been quite uniformly successful in this State. The most common matured value of shares has been \$100 and weekly dues of twenty-five cents. The total number of associations in this State in October, 1888, was one hundred and ninety-one, of which one hundred and fifty-eight were located in Baltimore.

In the number of associations, Ohio ranks next to Pennsylvania. The first was formed in Cincinnati in July, 1868, under the guidance of Dr. P. A. Keck. A *Manual for Building and Loan Associations*, published by S. Rosenthal & Co. of Cincinnati in August last, places the number in Hamilton County at four hundred, of which three hundred and twenty-five are located in Cincinnati. There are probably three hundred in the rest of the State. Dues in this State are usually placed at twenty-five cents a week. The number of shareholders in Cincinnati alone is estimated at seventy-five thousand. There is at Dayton one of the largest associations in the United States, but its business methods are in some respects quite unlike the true Building and Loan Association. It is called the "Mutual Home and Savings Association." It issues shares of the matured values of \$100 and \$500, and permits a share to be paid for in one payment, and thereafter to receive semi-annual cash dividends. From its fifteenth annual report, dated December 31, 1887, we learn that it had 5,835 shareholders and \$1,154,148 of assets.

The first association in Illinois was formed in Chicago, under the name of "The Chicago Building Association," in 1849, the second at Jerseyville in 1852, and the third at Chicago in 1857. No general act for their incorporation was passed until 1869. In 1872, this law was super-

seded by an act patterned after the laws of Pennsylvania. This was repealed in 1874 and re-enacted in 1879. In 1880, the associations became involved in a litigation touching the constitutionality of the law permitting them to receive premiums on loans in excess of legal interest. The decisions were adverse to them at first; but they finally succeeded, this contest calling into existence "The Illinois Building and Loan Association League." From the various tribulations through which they passed, they have at last emerged into great strength and popularity; and their growth during the last three years has been marvellous. Many estimates at the present time place over three hundred associations in Chicago and over two hundred in the remainder of the State.

The number in Wisconsin in November, 1888, was forty-two, of which twenty were located in Milwaukee. The first was formed at Appleton in October, 1883. They are rapidly increasing in numbers and popularity.

The early experience of the associations in Michigan was not such as to inspire confidence, and in 1877 a law was enacted somewhat restrictive in its provisions; but in 1887 an act was passed more liberal in its terms. Since then there has been a great revival of interest, and at the present time there are about forty-five associations in the State.

In Minnesota, building and loan associations have attained their greatest growth in the twin cities of Minneapolis and St. Paul, the first being organized in 1869. They are patterned after the Philadelphia plan, and have been successful from the first. It is estimated that from eight thousand to ten thousand homes have been secured through their agency, and their total number in the State is estimated to be over one hundred.

Their growth has been rapid in the last three years in Indiana, and especially in Indianapolis, where it is stated there are over one hundred associations. They are also

increasing rapidly in Iowa, Kansas, and Missouri; but of their number in those States we cannot speak with accuracy. They have assumed sufficient importance in California to call into existence a State league, and they are also beginning to appear in every Territory.

The Southern States are awakening to the importance and advantages of this form of co-operation. There are many flourishing associations in New Orleans, the oldest of which dates from 1882. Texas is reported to have fifty, which probably exceeds the number in any former slave-holding State except Maryland and Missouri; but they are found in every State in greater or less numbers.

The total number of associations in the United States cannot be stated with entire accuracy, but it will not vary much from 4,000. There is greater uncertainty in estimating the total amount of their present accumulated savings or the amount received by them annually; yet we have sufficient data from which to make an approximate estimate. From a careful analysis of such data, we estimate the accumulations now held by them to be at least \$300,000,000, and that the amount which will be paid to them in the form of dues alone in 1889 will exceed \$65,000,000.

At the close of our brief history of their success in Pennsylvania, we promised, after referring to them in other States, to answer the question, Why has their success in that State been greater than elsewhere? We believe the answer is to be found in the laws of the State which controlled their formation from 1859 to 1874. We have before stated that the first general act authorizing their incorporation was passed in April, 1859, and that this act limited the number of shares which a single association could issue to five hundred. At an average of ten shares to a shareholder, this would limit the total membership to fifty, or one hundred with an average of five shares to each stockholder. They were often called in these

early days in Philadelphia "Building Clubs." In 1851, as we have already noted, the limit of shares was increased to 2,500, and so remained until 1874. This limitation of necessity kept the associations comparatively small in the number of their several memberships. No well-paid official places were at their disposal. There was no chance to organize large associations for the purpose of securing to the organizers and officers lucrative positions in the management of the business. There was no opportunity for speculative organizations to come into existence under the name and guise of "Building and Loan Associations"; and, by reason of this limitation, they have retained the characteristics essential for continued success, and have escaped many of the dangers which in many other localities finally brought disaster to the early attempts in this form of co-operative endeavor.

There are some places in the country at the present time where schemes under the name of "Building and Loan Associations" are assuming great importance, which will prove in the end, we fear, unsatisfactory, if not disastrous, and unjustly cast odium upon the true Co-operative Savings and Loan Association. This is especially the case in the North-west. The popularity of some of the methods upon which the business of the true Building and Loan Association is conducted is being taken advantage of to build up immense corporations, bearing the name of "Building and Loan Associations," which are not content even to confine their operations to the State wherein they are incorporated, but push into other States, and aspire to become national in the extent of their business.

As a sample of this class of corporations, we quote the following from an article in the *Minneapolis Tribune*, issued February 9, 1888, relating to one of them. We omit the name:—

This association was organized a little less than two years ago, and has been successful beyond the expectation of even its friends.

To accommodate its rapidly growing business, new offices were needed; and the entire second floor of the National Bank of Commerce building is now used for this association alone. Some idea of the magnitude of the business can be obtained from the number of persons in the employ of this association. There are now in the home office twenty-five clerks. Ten special travelling appraisers are constantly on the road, inspecting loans. In addition to this, there are about one hundred and fifty travelling solicitors engaged in selling stock. Already stock of this association to the amount of \$18,000,000 has been sold, the membership now being more than twice as large as that of any other association in the United States. There are among the members of this association nearly one thousand bankers, and more than two-thirds of the remaining membership is composed of merchants and business men.

A corporation of this character is no more entitled to the name of "Building and Loan Association" than a "Western Loan and Trust Company." Did these "one thousand bankers" take stock for the purpose of accumulating savings? An examination of the facts would reveal that they paid for their stock at a single payment, and are to receive semi-annual cash dividends, and are expecting it will be a very remunerative investment. If the inquiry is pushed to the extent of asking from what source the profits of the company are to be derived, we shall find the answer to be that borrowing stockholders in the association are to pay premiums* upon their loans in excess of legal interest. These "one hundred and fifty travelling solicitors" will "rope in" the ignorant and unwary borrowing stockholders by describing the merits of the genuine Co-operative Savings and Loan Association scheme, and by representing that, while they seem to be paying a large premium in excess of legal interest weekly or monthly, they will get it back in the dividends added

*Since writing the above, a circular of this association has come into our possession, from which we quote as follows: "Premiums bid are now running about \$50 per share [shares are \$100]. At this rate, two shares of stock are required to be held for each \$100 loaned. The cost of a loan at this premium, with interest added, is \$1.70 per month for each \$100."

to their stock, and that in the end their loans will not cost them more than legal interest, and possibly even less. The borrower sooner or later will find that he has been deceived, that he is in a net from which he cannot extricate himself without severe loss. All sorts of charges upon the management will begin to be made; and influences akin to those which sought relief in the legislative halls at Albany from New York City in 1855-56 will bring the association and its schemes into disgrace, and cast odium not alone upon the false, but also upon the equitable and uniformly successful methods of co-operative savings and loan associations.

These criticisms are not aimed at the association above referred to especially, but at the whole class of associations which are endeavoring to be classed as building and loan associations, but are, in fact, corporations formed and conducted for purposes wholly different from the objects of the class of associations whose name they assume. The friends of the latter in Minnesota are already aroused to the danger with which these falsely named corporations menace their future, and at the present time legislation is pending to bring them under State supervision and control.

Any co-operative building and loan association should be confined in its operations at least to the county in which it is located, and, when located in a city, to the city itself and the territory immediately adjacent, in making loans upon real estate. It loses its distinctive characteristics and strong elements of safety whenever its operations become enlarged and extended over a wide field. It ceases to belong to the category of co-operative savings and building-loan associations, and is no longer a co-operative society of the vicinage, in which all may become interested, have a voice in its management, and full knowledge from month to month of all its transactions.

The economic benefits resulting to society from this form of co-operation, when properly conducted, can hardly be overestimated.

1. As an "institution for savings," no scheme has yet been devised and put into operation which combines safety of the funds, cheapness in management, and good rates of interest in so great degree as the Co-operative Savings and Loan Association.

There is never a large sum of money in the hands of its treasurer or other officer for him to steal, if so inclined. Any possible loss from such a cause can be amply covered by his bonds, unless there is great carelessness; and, if that occurs, and the treasurer becomes a defaulter, it can be only for a small sum compared with the accumulated capital. The loss, when distributed among all who have to bear it, will be but a small percentage.

The moneys received at the stated meetings are soon thereafter loaned to borrowers or paid to withdrawing stockholders. Only first mortgage upon real estate or a pledge of the stock of the association exceeding in value the amount of the loan is taken as security. In case of loan upon stock, the security is perfect. In the mortgage loan, the real estate is located in the vicinity, and there is no difficulty in ascertaining its value. The committee having the investment in charge are financially interested in the safety of the security taken. They receive no fees or percentage in case they accept an offered security, which they would lose by rejecting it. All the ordinary motives that affect men's judgment under such circumstances conspire to influence them to accept only a safe security. Another most important element in the safety of the investment, when made, lies in the fact that the borrower, besides paying his interest from month to month, is also paying dues on the stock borrowed upon, which the association also holds as a collateral, thereby increasing from month to month the safety of the security.

For this reason there is little danger that an investment, safe when made, will ever become unsafe. While, on the other hand, if from an error of judgment or otherwise a security is accepted that is not "gilt-edged," it will grow better from month to month, while the borrower continues to pay his monthly dues and interest. The expenses of conducting the business are small. Usually no officers receive pay except the secretary and treasurer, and their salaries are small. The fees of the attorney in perfecting loans are paid by the borrowers.

It will seldom occur that the funds cannot be loaned at legal interest, and often there will be competition among borrowers whereby a premium will be paid. There is also the important fact that the interest is paid monthly and loaned at once, whereby monthly compound interest is secured without the borrower having to pay compound interest. The entrance-fees on stock issued, the fines on defaulted payments, and transfer-fees will often pay all the expenses, and leave the interest premiums and shares of profits left by the withdrawing stockholders to be distributed in dividends, thereby securing to the stockholders a larger interest than any other form of savings institution can pay.

2. An association of this character can be conducted successfully in any business centre having a population of five hundred, and thereby the benefits of an "institution for savings" can be secured by the many villages that have not sufficient population to maintain a savings bank.

3. As a means for stimulating savings, such an association is more potent than the savings-bank for several reasons. The depositor in the latter may withhold or deposit at his pleasure, or, having deposited, he may easily withdraw the money and use it to satisfy some present want, the gratification of which is not a necessity. He does not feel himself united with others in his endeavors

at saving. But, when one has taken stock in an association, he has entered into an agreement to pay a certain sum weekly or monthly. He has a definite aim and purpose, and has agreed to suffer a fine if he fails. Some, at least, of his fellow-stockholders will know of his failure, his pride will be stirred, and he will be more certain to save the amount of his dues, appear at the stated meetings and pay them, than he would if he were depositing in the savings-bank. When he has paid them, they cannot be obtained so easily. He will have to give thirty days' notice in writing and surrender some share of the profits if he withdraws. He has a feeling of ownership in the association, a vote in electing its officers. He has a social time on the evening of its meetings, makes new acquaintances, ascertains who the borrowers are, and what premium they had to pay for the loans if there was competition at the sale of the evening receipts. All these influences stimulate his endeavors: he takes pleasure and pride in them, and will talk with friends about what he is doing, urging them to take stock in the association. He is forming four habits which will be important in their effect upon his future welfare; namely, habits of promptness, saving, frugality, and industry. If he is a man of family without a home, he has learned a practicable way to get one. Moreover, it inspires hope, not alone in him, but in all his household. They are no longer content to expend all the earnings of the week in paying bills contracted during the week. As soon as a sufficient sum is accumulated to make up the margin between the purchase price of the home and the sum the association will loan upon the property, he can borrow the money and purchase the home, and his dues and interest will but slightly exceed the sum he was paying for rent. The unmarried clerk or artisan has learned a practical mode of accumulating a sum to go into business for himself in the future. The father, already thrifty, takes shares for his children,

and trains them to habits of saving more easily than he could do otherwise.

The influences which radiate from these associations in a community are elevating, and the results which they induce possess in a high degree the desirable characteristic of permanency. They deserve the attention of all men who are interested in practical agencies for advancing the masses of men in their material welfare, by developing and stimulating the habit of saving some part of small incomes and the desire of owning homes. For the purpose of securing these results, no scheme has yet been devised and put into operation which is the equal of these associations, when organized under proper legislative guidance and restriction, and guarded by a wise State supervision.

SEYMOUR DEXTER.

"THE POSITIVE THEORY OF CAPITAL."

Professor Böhm-Bawerk's *Positive Theory of Capital*,* the promised sequel to his *History and Criticism of Theories of Interest on Capital* (1884), appeared early in January of the current year. A short sketch of this important book will serve to supplement the account of the Austrian school of economists, given in a recent number of this *Journal*.†

By Capital, in a general sense, the author understands all "products used to procure goods." This definition excludes land and labor as not being products; and it includes private capital as well as social capital,—the means of procuring goods by hook or by crook for the individual as well as the means of procuring them for the whole body of men by production. It is the latter (or social capital) that is discussed in the first part of the volume before us; and, where "capital" occurs without an adjective, we are to understand by it, not a means of income, but a means of production. Private capital has its share of attention in the second part of the book, where Interest is the subject.

Social or productive capital is further described as "a group of intermediate products," or, in other words, products which are the means to the making of other products. The definitions of other economists are briefly examined. We are shown, for example, that Senior was wrong in explaining capital as mere abstinence, though so far right that capital is not possible without abstinence or saving, the said abstinence or saving having in reality much more than a merely negative character. A dozen other definitions fare little better than Senior's.‡ There is just enough of this critical and historical element to make the present book nearly complete in itself apart from its predecessor.

Capital, then, is something different from land; but it is

* *Kapital und Kapitalisms*, II^{te} Abtheilung: Positive Theorie des Kapitals. Innsbruck, 1889.

† October, 1888.

‡ *Kapital und Kapitalisms*, II., Book I. § III.

not placed on an equal footing. It is dethroned from its place in the time-honored trio of productive agents,— "Land, Labor, and Capital." The notion that capital had an independent power of production was due to the supposed need for a counterpart to the third member of the trio of incomes,— "Rent, Wages, and Profits." These were really separate incomes, but their counterparts were not in the same sense separate sources of production. The only independent agents of production are natural forces (called by metonymy "Land ") and human labor. There is no third. Capital is neither an agent nor an end, but a means. When a stone kills a man, the thrower, and not the stone, commits murder; and, when capital results in a product, it is man and nature that are responsible for the production.

If capital is not productive, what, then, is its function? The answer is as follows: In production, man slips alongside of natural forces and turns their work to his purposes. Now, he finds that he gets the best result, as a rule, when he makes use of them in a long and indirect rather than a short and direct process. Their longest way round is his shortest way home. The long ways, however, are precisely the ways of capital. Capital forms the steps in a roundabout journey. Once the journey has been made, no doubt all later journeys of the sort are shortened. It is the first steps that cost. Once the net is made, more fish are caught, and caught more quickly, than by the line or the bare hands. But the first making of the net was a long and slow process. If, indeed, the way of capital were always (what it is sometimes) not longer, but shorter, than the direct way, there would, as we shall find, be no interest on capital; for there would be no loss of time involved in the employment of it. Interest on capital is due to loss of time implied in a long as against a short process of production. That is Böhm-Bawerk's theory in a nutshell.* Jevons had spoken of all production by capital as requiring a "lapse of time between the beginning and the end of industry," but

* In the January number of this *Journal*, Professor Fetter of the University of Pennsylvania, in an article on "The Fundamental Idea of Capital," published views which are in many respects strikingly similar to those of Professor Böhm-Bawerk, though they must have been reached in entire independence.

he did not see how vital was this lapse of time to the very existence of interest.

We must approach this vital question through the theory of Value, which is an essential preliminary in all discussions of Distribution. The theory of Value held in common by the Austrian economists has been already described in this *Journal*.^{*} The earlier essays of our author on this subject have been incorporated in his new book, and we need only notice such portions of his earlier exposition as have been amplified by him for better application to the particular subject before us. The chief is perhaps the doctrine of the value of complementary goods. Menger had long ago defined capital itself as a "total of complementary goods of higher rank." The goods in a complementary group have, as a group, a value that is different from their value taken severally. Ink and pen, rifle and cartridges, right and left hand gloves, are specially obvious examples; but their name is legion, and includes, we may say, all "freely produced" goods whatsoever. Now, when any parts of the complementary group are replaceable by substitutes, those parts have, in separation, only the value of those substitutes. If some bricks for the building of a house are destroyed, others are easily procurable; and the value of the bricks will be only the value of the easily procurable substitutes. But, where any one of the parts is irreplaceable, then the value of that part will be equal to the whole difference between the separate values of the replaceable goods (say, the bricks, mortar, wood, lath, and plaster) and the value of the entire house. We should, even in common experience, deduct the former from the latter, and attribute the value of the house (*i.e.*, its special value as a combination of all these and the remaining elements) to such irreplaceable features as situation or architecture, or whatever tended to make it in any sense unique. Common language gives the irreplaceable factors the credit of the whole. It is as when we speak of "the land" as producing a rich or a poor crop, though the ploughman, the plough, the sower, and the reaping-machine had all a hand in it. The replaceable goods are reckoned as Cost, and the rest of the means of production get the credit

^{*} October, 1893.

of the production itself. In a factory, for example, the production is, in common language, ascribed to the managing employer, because it is his directing skill that is supposed to be the one irreplaceable factor in the business.* The complementary character is more plainly stamped on some groups than on others, but there is a sense in which every process of production whatever involves a complementary group; for every production involves a combination of land, labor, and capital, and, so long as we respect the *caveat* above mentioned, we should not be inaccurate if we assigned to these three their shares in the value of any product in accordance with the above principle of Complementary Value. We should then distribute the shares as, respectively, rent of land, wages of labor, and interest of capital. By the method of Residues, it might even be thought possible to ascertain the amount of interest by deducting wages and rent from the total. But all that we could really discover in this way would be the gross returns to the whole process of production, not the net interest and profits. Profits, indeed, we may cease to consider as a special part of this inquiry; for (according to our author) what of it is not wages of management is the gain of speculation or opportunity, and falls under a different category from interest. Now, by the doctrine of Complementary Value, we should more naturally expect to find nothing over at all, after the said deduction of wages and rent, than to find a surplus called Interest; we should expect all to go to the irreplaceable land or to the irreplaceable skill of the managing employer.

Interest, therefore, is still a problem. It had been shown † by our author that the value of the means of production lags behind the value of the finished product. How and why does this come about?

The explanation lies in the difference in value between present and future goods as such, whether they are goods ready for consumption or products converted into capital. All

* The allocation of the shares in the whole value to the several factors is a subject treated with great skill and fulness by Professor Wieser in a recent monograph on *Natural Value*, published in Vienna at the end of last year.

† See *Quarterly Journal of Economics*, October, 1896, p. 21.

economic action or husbanding of goods depends on the psychological fact that human motives include the idea of future as well as of present satisfaction. The greater part of our stock of goods is not for present, but for future use. The greater part of our motives relate to future satisfaction. The economist accepts this as a fact of every-day experience and as implying the commensurableness of present and future wants in men's estimates of Value. Men habitually compare present wants and satisfactions with future wants and satisfactions. They value present goods and future goods in one and the same way; namely, by the measure of their actual and their probable resources,—in one and the same way, but not at one and the same rate: “also, but not likewise.” Their estimates are usually to the disadvantage of the future. “A bird in the hand is worth two in the bush.” “*Bis dat qui cito dat.*” Such maxims imply that, other things being equal, the present is more to a man than the future. But other things may not be equal, and the future may be more to a man than the present. An annuity twenty years hence may, through his probable slackening of energy and need of retirement from business then, be of greater “subjective value” to him than it would be now. So ice in the month of February is less valuable than it will be in July. To a crew now in port, water is less valuable than it will be next week in mid-ocean. To a large body of men, whom we call capitalists, present goods and future are, on the whole, of about equal (subjective) value: they have more than enough for present wants. Ordinary men (as distinguished from wise men) are tempted by their own imperfect grasp of the future or by weakness of will or by a sense of the uncertainty of life to give even more weight to the present than it ought to have as against the future; and the final utility of future goods appears smaller than it should be, because of the personal “perspective” in which the individual sees it. It will be observed that Professor Böhm-Bawerk admits that our criterion is not what every man thinks to be good, but what the wise men think to be so.* Even the wise men, however, value present goods, *cæteris paribus*, above future. This gen-

* Compare *Quarterly Journal of Economics*, October, 1888, p. 24.

eral superiority in value of present goods to future is of cardinal importance for our author's theory of interest, and it is to be regretted that space will not allow us to trace out in detail the long proof he devotes to it.*

In the case of productive goods in particular there is a technical (or physical) reason for the difference of present and future, not to say past and present; and that is simply the tortoise's advantage in having the first start in the race. Means of production set working in the present, and forming part of a fruitful, because roundabout way of production, have clearly the advantage over what has not already begun its work, but only begins next year or later. The old maxim, "Never put off till to-morrow what you can do to-day," is certainly sound where success depends on the accumulated result of continuous efforts. Present means of production are therefore, *ceteris paribus*, superior to future.

Thus (to use the words of our author), "whether from the difference of men's resources in present and in future respectively, or from their tendency to undervalue future joys and sorrows, or else from regard to the technical superiority of present goods over future,—in any case, the overwhelming majority of human beings set a higher subjective value on present than on future goods otherwise identical. From such subjective valuations arise, in the general market, a higher objective value in exchange and higher price for present goods. The said higher objective value and price react on subjective valuations, and thus give to present goods a higher subjective value in exchange,† even with those persons for whom (through their personal circumstances) such higher subjective value would not otherwise have existed. Finally, the levelling tendencies of the market make the depreciation of future goods bear a regular proportion to their degree of futurity. Accordingly, in the economy of nations, future goods are depressed both in subjective and objective value more or less deeply in proportion as they are more or less

* *Kapital und Kapitalismus*, II. 251 et seq.

† See *Quarterly Journal of Economics*, October, 1888, p. 12. Subjective value in exchange is the importance to me of an article exchanged by me.

remote from the present."* This is the origin of economic interest, whether on loans, employer's capital, or fixed capital.

In the case of a Loan (*Darlehen*), as distinguished from a case of Hiring-out, we have simply an exchange of present goods for future: the interest represents the difference in value between two precisely similar goods, of which one is present and the other is future. As difference in Space has always been thought enough reason for exchange of one article for another, say of a field far from my house and near my neighbor's for a field near my house and far from my neighbor's, so difference in Time is an equally sufficient reason. There is no need to imagine, as some have done, a "use" of the article which is separable from the article itself. The article lent (say a crop of corn) is not only used, but used up: no "use" of it remains over, when the time comes for repayment. What is returned to the lender, even where there is no fraud whatever, is an article which is physically different, though it is legally and economically equivalent. The payment of the premium (or in exceptional cases of the discount) on the difference in time is usually made by instalments; and this accidental circumstance has caused the false impression that the payment of the premium is made for something existing separately from the thing lent. But the value of the goods eventually repaid and the value of the several "interests" paid in the way of instalments are together, normally, no more than equal to the value of a future good transferred vicariously to the present before its time.

The second case, or Interest on Productive (or Social) Capital,† is less simple. In the following statement of Böhm-Bawerk's positions in regard to it, no violence has (it is believed) been done to his thought, though some liberties have been taken with his language.

Present means of production will (on the principles just explained), other things being equal, bear a higher value than future means of production. But, as only *means* of production as distinguished from finished articles, they are in much

* *Kapital und Kapitalismus*, II. 299.

† *Ibid.*, II. 315 et seq.

the same relation to the finished articles as future finished articles to present finished articles. They are physically present, but by deliberate human purpose they have been made, economically, rather future than present; and, till they have issued in their product, they have, at least in relation to products, the inferiority of future goods to present goods. Accordingly, the value of the means of production is normally found to lag behind the value of the finished article.* The inferiority of the former seems the more conspicuous when we regard consumable goods or finished articles as either themselves food or easily convertible into food for workmen, and therefore as being the condition without which the potential product will never become actual. Food is not itself capital, but it is a condition under which capital results in its finished product. The food supplied men to-day enables them to work to-day at a process of production which will bring them finished goods two or three years hence, but no food, in the mean time, to support life while they are at work.

We have next to remember that, of several alternative ways of production, it is not necessarily the one that leads to the greatest quantity of produce that leads also to the greatest value; and it is the latter, not the former, that determines economic superiority. Great quantity and great value are, indeed, almost inconsistent with one another. In the second place, productiveness, even in the case of goods freely produced, cannot be extended and expanded indefinitely at the same rate of increase, "or else we should spin all our cotton in the one most favorably situated gigantic mill."† There is a law of decreasing productiveness not only in agriculture, but in manufacture.‡ Taking these considerations together, we see why it is impossible to pronounce off-hand whether the most profitable production will be the longest or the shortest or (though this is the most likely) an intermediate. The old formula that normal value was equal to cost together with interest does not help us, even if we paraphrase interest as "the *agio* of present over future." Of two or three alternative

* See *Quarterly Journal of Economics*, October, 1888, p. 21.

† Mr. S. Webb, in *Quarterly Journal of Economics*, January, 1888, p. 284.

‡ *Kapital und Kapitalismus*, II. 89.

ways of producing the same article, the difference in quantities produced, which is usually in favor of the longer ways, might overcome the difference of time, which was in their rivals' favor, and lead to a greater aggregate of value as well as quantity. A short way (A) might thus, for example, secure 100 units of value, an intermediate (B) 250, and a long (C) 350, the later (D, E, F, etc.), though resulting in greater quantity, falling off in value to 300, 200, and so on. A particular process (E) might take a long time, and yet yield, after all (because of decreasing productiveness), so very little more than the one next to it in productiveness that the margin of difference is swallowed up by its futurity. An investment to which this happened would find itself just outside the paradise of profitableness, and the one next above it would be the final or marginal* investment, as being the least profitable of the "nevertheless profitable" investments. The product of this final investment would be the final product whose value rules the value of all its kind, by whatever other method produced. The competition of the capitalists themselves will prevent the value of that product which is got by the final way of investment from becoming or remaining greater than the amount of the premium on present, as compared with future, goods. Anything beyond it would be the gain of the speculator, and not the interest of the capitalist employer.

Let us see how the capitalist employer proceeds with his investment. In the market of labor, he represents the demander over against the workmen, who represent the suppliers and who are (we may assume) without capital. He is clearly in a position of advantage. If he has any preference, it is rather for future goods than for present, whereas to the workmen the present goods mean their livelihood. They are forced to sell their labor, for the alternatives are either to starve or to work at methods of production (say hand-loom weaving) which are obsolete and do not yield enough to support life.† In the market of the means of living (which we

* "Marginal utility" is a happy phrase used by P. H. Wicksteed, *Alphabet of Economics* (Macmillan, 1888).

[See also Professor Patten's note on "The Margin of Cultivation," p. 356 of this number.]

† See the tables given in *Kapital und Kapitalisten*, II. 402-404.

may call briefly the market of food, though our author includes all that supplies the several wants made necessary to men by their several standards of living), the workmen are in this case the demanders, and the supply consists, roughly speaking,* of the whole existing stock of finished goods in the community, the function of this stock being to support the works in the interval between the investment of capital and the completion of production. The "advances" of food, however, need not be the full quantity that will in the end be required during the whole period of production; for the capital is invested by stages, and the food may be in like manner advanced to the workers by stages also. The first advances may be little more than half of the quantity of food that will be ultimately needed. Yet the demand for present consumable goods—or, in other words, the demand for the means of living—will always exceed the supply.† There will always, even from this point of view, be a premium on present over future goods, and therefore an interest on capital. It is simply a special case of the general principle that the limitation of the supply of a needed article will be the cause of value.

There is one more case to be considered,—interest on durable goods in general, and fixed capital in particular.

The explanation, however, is similar. In the case of all perishable articles (including "circulating capital"), the value plainly depends on the final utility of the total of the services they render. The thing and the uses of the thing are, even to the vulgar eye, inseparable. Now, to the eye of pure reason, the same is true of the durable article. Its value is not equal to its total services, but to their final utility; and the final utility of a future service is less than the final utility of a present in proportion to the length of time that lies between them. Therefore, we ascertain the value of a durable article,—say, a gate or a house,—not by adding its total services, which might be indefinitely numerous and go on for a century or two, but by adding the final utilities of them.

* The exceptions are given below, p. 249.

† Here, again, our limits of space forbid us to reproduce our author's extended proof.

The latter will give us a series, not of identical, but of dwindling items. Suppose a half-acre field to yield 20 bushels of wheat on an average every year, the value of that field is not the value of the said 20 multiplied by infinity, but the value of 20 present bushels added to the value of 20 of next year, which are only equal (*ceteris paribus*) to about 19 of this year, and to the value of 20 of the third year, which are in value only equal to, say, $17\frac{1}{2}$ of this year, and so on. We should thus get a total of diminishing items,— $20 + 19 + 17\frac{1}{2} + 15 + 12\frac{1}{2} + 10 + 7 + 4 + 1 + 0$, the sum of which is not infinity, but 106, or the value of 106 bushels; and the price of the field would be not infinity, but (at 5s. a bushel) £26 10s. The value of land itself is only a particular case of the value of durable goods; and we see how a man may pay the full value of the land and yet receive, year by year, a net profit from the rental of it. He pays the present value of the future services of the land, knowing that “the future belongs to him who can wait.” He waits accordingly; and the future goods, which he bought when they were still future, come to him when they are present, and therefore more valuable. In this way, though he paid the full price, he reaps a net income. Ricardo’s theory did not carry us so far: it explained only the gross returns, and not the possibility of a net rent from the land. It rightly applied to the value of agricultural produce the principle of final utility and of the value of complementary goods, doctrines of which it had unhappily made no use in any other connections. But Ricardo’s reference to the “indestructible powers of the soil” betrays the defects of the theory. The value of a quarry exhaustible in fifty years would be no less than the value of a field yielding an annual produce of only the same value as the quarry’s; and yet the field would probably be, for all human purposes, indestructible. The lender of money, the employer of labor, and the purchaser of land have one feature in common,—they hold the present cheap in comparison with the future, and they deal with men who hold the future cheap in comparison with the present. The gains, so far as they are mere interest, are no injustice to the latter. Of course, “like other human insti-

tutions,"* interest has its abuses and perversions; but, in itself, it is a necessary economical category, and not merely a historical one.

The case of fixed capital, being the case not of durable goods in general, but of durable "products used for production," has, no doubt, complications of its own. If nearness to the final product lessens the depreciating effect of futurity, nearness to the point where the fixed capital becomes exhausted or worn out has a contrary effect. In many cases, the services or uses of the fixed capital are detached in the course of production and have a separate embodiment of their own: the first yarns are turned off and dismissed from the mill to the factory, though the life's work of the spinning machinery will last for years afterwards. But these belong to the many complications due to the highly organized division of labor in modern industry, where what is economically a single process of production is broken up into branches treated separately by separate trades. In all essential respects, interest on fixed capital is like interest on any other durable goods.†

We have thus seen the cause of the existence of interest. We have now to see the causes that make interest high or low. Let us take the question in its most difficult form, where there is competition of traders in open market. Let us simplify the problem first by supposing that the finished goods in the market are offered in demand for labor, and for nothing else; second, that the market embraces the whole people, so that in dealing with it we are dealing with the whole economy of the nation; and, third, that all branches of production concerned have the same productiveness and the same scale of increments in productiveness corresponding to their long and short methods of production.

Our first difficulty will be with labor; for, unlike other goods, labor is not subjectively of a fixed value, but owes its value to its anticipated products. The buyer of any other

* *Sie, Kapital und Kapitalisme*, II. 305, cf. 303. The phrase is less felicitous than usual; for it suggests deliberate human invention, which is certainly not meant.

† Here and elsewhere, our author might have given us a few illustrations, say, from Babbage's *Economy of Machinery and Manufactures*,—e.g., pp. 51, 106, 110-112, 174, 211, 235, 251, 301 (ed. 1832).

article knows the article's precise importance to him before he buys it; but, in going to purchase labor, he does not know what the value of it is to him, except by the anticipated value of its possible products. On the other hand, given the value of the product, the profitableness of its production depends partly on the wages paid to the workmen that help in the production. But we have fortunately a fixed point here, which is not fixed in other cases,—the total of the quantities that pass from the employer to the laborers; for we are bound to assume that the two parties, one from necessity and the other from choice, will in every case come to a bargain, and therefore the whole available stock of consumable goods will pass from the one to the other. The rate of wages will be such as will employ all the workmen,—non-employment is exceptional and due to dislocations in the industrial organism,—and the rate of interest will be determined by the productiveness of the last applied portion of capital that is economically applied at all: Von Thünen was quite right on this point.* The special determining elements are the amount of the fund of subsistence, the number of workmen, and the scale of productiveness. Interest is high, if subsistence is small and if workmen are many and if the productiveness goes not increasing with large increments. It is low, if the reverse be the case. Experience confirms these positions, for it shows that, with the increase of the means of subsistence, the rate of interest declines; that the said rate of interest depends, not on absolute amount of capital, but on its proportion to the working population; and, finally, that the discovery of new and advantageous methods of production or exchange sustains the increments in productiveness and keeps up the rate of interest,—whereas the contrary has the contrary effects.

When we remove our assumptions, our conclusions need little modification. Competition levels inequalities in the various branches of production and in the various markets of the actual industrial world. Skilled labor is translatable into a multiple of unskilled. Periods of production and increments

* See his book *Der isolirte Staat*, as quoted in *Kapital und Kapitalismus*, II. 421. A theory like Von Thünen's was given in this *Journal* by Mr. S. Webb, January, 1883.

of productiveness are unequal in different branches; but capital seeks equality of increment,* though it may be not in the straight lines of our abstract tables, but in the zigzag lines of ordinary life. Further, finished goods are, as a matter of fact, wanted for unproductive consumers, land-owners and people living on interest of capital, as well as for productive laborers. We have to add to our three elements determining the rate of interest four more,—the extent and intensity of the demand for loans for consumption, the amount of rent of landlords, the sums paid to capitalists living on their profits, and, we should add, the economic temper of the whole population, employing and employed, whether they come near to the ideal of economy and provide for the harmonious satisfaction of present and future wants alike, or are preoccupied with the present to the neglect of the future. Still, these four elements are to the first three as minor electric currents caused by induction are to the chief currents themselves. The two groups act and react on each other, but the major remain the major.

Readers of this *Journal* will observe that Böhm-Bawerk has fully anticipated the wish expressed in a recent number,† that the Austrian economists should apply their theory to the various forms of modern industrial life. It has been impossible, however, in the limits of a short article, to follow every step of our author and cover his whole ground. For like reasons, it is impossible to do more than mention the kindred work of Professor Wieser on *Natural Value*,‡ which includes, amongst other things, an ingenious attempt to show that under a communistic régime the economical phenomena of value would all reappear, and the kindred work of Dr. Zuckerkandl on the *Theory of Price*.§

It may be well, however, in view of the challenge in the October *Journal*, to present the views of Böhm-Bawerk on

* Equality of height of increment, Isohypsa [*iso-hypsa*], *Kapital*, II. 435.

† October, 1900, p. 28.

‡ *Der natürliche Werth*. Theil I.: Der Werth in der Privatwirtschaft. Theil II.: Der Werth in der Staatswirtschaft. Von Dr. F. von Wieser. Wien: A. Holder.

§ *Theorie des Preises*, mit besonderer Berücksichtigung der geschichtlichen Entwicklung der Lehre. Von Dr. Robert Zuckerkandl, Wien. (Leipzig, 1900.)

the Wages of Labor in somewhat greater detail. Wages (he says), being an easier theoretical problem than interest, cannot usefully or logically be described as interest on personal capital. They are payment of labor, and enter into the "cost" of goods, like any other replaceable factor of a complementary group. Their amount is determined, on an average, not by a wages-fund, but by the mutual proportions of the fund of subsistence, the numbers of the laborers, and the productiveness of the dominant industries. The wages-fund which the English economists took for one of the two factors in the solution of the problem was really the very problem itself. What we want to know is why the amount given to laborers is high in one case and not in another. The English economists, too, did not sufficiently observe that, if we take the total fund of subsistence at any given time, we do not know whether it will be devoted to paying laborers for one year or to paying them for six, whether it is to be spent on a directly remunerative enterprise or sunk for some years in machinery or other fixed capital. We must give up the theory of a wages-fund; but we do not, therefore, accept the socialistic view that the laborer who gets less than the ultimate value of his product is defrauded of the difference. There only seems to be a fraud when we judge of the wages from one point of time and the value of the product from another. The surplus value is simply the difference between present and future; and it appears in the case, not only of the product of labor, but of agricultural or, indeed, any other produce: 100 future bushels are not paid so highly as 100 present, 100 calves as 100 cows, 100 saplings as 100 trees. Even under a socialistic direction of industry, this difference would appear; for socialism itself cannot make future into present. Is a forester who plants a row of saplings that will, in the remote future, be worth £100* to be paid that sum in wages now or that sum in wages then? The latter course means starvation to him, the former unfairness to his fellow-workers, whose products are (like the baker's, for example) realized at once. But, if he gets the whole £100 neither now nor in the future, he will probably be paid at a rate equal to his fellows; and what is over of the £100 which

* Or 100 units of value, whatever be the units chosen.

he will have produced will be secured, as the years go on, by the whole society for the general benefit. There is thus an "exploitation" of this worker for the general good. The difference between present product and future product has perforce been regarded, and the confiscated surplus value has been nothing more or less than interest. Confiscation for the general good does not transform it into wages any more than a selfish use of wages transforms them into profits.* Interest, in short, has an economical essence, which must be distinguished from its historical accidents. The essence of rent is not the payment of a tenant to a landlord, but a surplus produce that would go to the peasant owner of a fertile farm, or would, under socialism, be taken away from him for the benefit of the general public. In the same way, it is no part of the essence of interest to be a payment, to a wealthy individual, of a surplus produce that the accidents of birth or opportunity enable him by law to confiscate. Such accidental circumstances may surround it now, but they may be conceived to disappear. The majority of men may not always, as now, be under the absolute necessity of working for wages. But, even if private property is abolished, the essence of interest would remain; for no development of human society will abolish time.

It would be bold to say that Professor Böhm-Bawerk has said the last word on the theory of Interest. But his theory so happily combines ingenuity with simplicity, and he has shown himself so frank in anticipating objections and facing difficulties, that his book must be regarded as one with which all subsequent writers will have to reckon.

JAMES BONAR.

* *Kapital und Kapitalismus*, II. 394, 395.

NOTES AND MEMORANDA.

It is announced that a reprint of Arthur Young's *Travels in France* is to be prepared by Mr. A. W. Hutton, with a preface by Professor Thorold Rogers. Young's narrative and his later comments on the progress of the Revolution are to be given; but it is reported that "the agricultural and other statistics, which are now no longer of general interest, will be omitted." There can be no doubt as to the historical value of the promised reprint, and it is to be hoped that its economic interest will not have been impaired by the proposed excisions.

A rival reprint of Young's *Travels* is also to be issued in Bohn's Standard Library. This is to be abridged and edited by Miss Betham-Edwards, who is assisted by Mr. Arthur Young, grandson of the author.

"BRADSTREET'S" continues its reports on labor troubles by giving a summary of the strikes and lock-outs recorded in its columns during the year 1888. A comparison of the recorded totals with those for the two years preceding shows a marked falling off in the number of striking workmen. We reproduce the figures:—

In 1888, there were 356 strikes, involving 448,000 workmen.

1887,	"	"	884	"	"	346,000	"
1888,	"	"	679	"	"	212,000	"

The figures for 1886 are doubtless defective: the recording of strikes began in that year, and many smaller movements then escaped notice. We may fairly conclude from the figures that wide-spread strikes, involving many employees at once, like those of Knights of Labor in 1886, are becoming less common.

The following summary is given of the results of the struggles for the last two years:—

	1887	1888
Strikes succeeded,	308	255
Strikes failed,	504	419
Strikers succeeded,	131,900	107,000
Strikers failed,	215,000	105,000

Turning these figures into per cents., we find that in 1887 about 42 per cent. of the strikes succeeded, and in 1888 about 36 per cent.; but in 1887 only 38 per cent. of the whole number of strikers succeeded, and in 1888 more than 50 per cent. On the whole, therefore, the struggles of 1888 turned out better for the workmen than did those of 1887. Still another summary classifies the causes of the strikes, as follows:—

	Strikes.		Strikers.		By Per Cents. of Total.			
	1887	1888	1887	1888	Strikes.		Strikers.	
Wages and hours,	542	372	212,300	145,500	62	55	62	66
Unionism, . . .	225	198	77,300	37,500	26	20	22	17
Sympathy, . . .	68	15	47,000	16,400	8	2	12	8
Miscellaneous, .	37	68	8,300	12,500	4	12	2	6
Totals, . . .	872	679	345,900	211,900				

It will be noticed that the number of strikes as to which the result or cause is stated is less than the total number reported as having occurred. In a few cases nothing seems to have been learned except that a strike had taken place.

In a previous issue of this *Journal* (vol. ii. p. 215, January, 1888), some account was given of the bill prepared by the German Imperial Government for the extension of the system of compulsory insurance to the contingencies of old age and permanent disability. The bill there described has been much amended, and an almost entirely new draft was submitted to the Reichstag at the beginning of the current session. After a first reading, the new bill went to a commission, by which it has been further amended; and, at last accounts, it was before the Reichstag for a second reading. It is probable that many changes will still be made, and we reserve a detailed

account of this addition to the insurance system until the act is finally passed. It is already clear, however, that the scheme will take a very different shape from that first projected.

The salient features of the bill as it now lies before the Reichstag are: first, that the machinery for old-age insurance is entirely independent of that for sick or accident insurance. There are to be government insurance bureaus, some thirty in all, distributed geographically through the Empire, and supervised by an Imperial Bureau. The original scheme of putting old-age insurance into the hands of the *Berufsgenossenschaften* seems to be given up for good. Another change is made, also of a distinctly bureaucratic stamp. Neither employers nor employees will have anything to do with the system, except to pay the contributions and receive the pensions. Next, the benefits to be yielded to the workmen are much increased. It was felt on all hands that the first draft did not give the workmen appreciably more than the poor-law already yielded, and certainly not enough to calm their socialistic feelings. Consequently, the pension for old age begins at sixty-five instead of at seventy. Women get as much as men. The pensions are not uniform, but vary with the wages earned, contributions varying similarly; and, for this purpose, work-people are divided into six classes, according to the wages earned by them. Better provision is made for the immediate future, the transition period before the scheme can go into full effect; and in various details the workmen are more liberally provided for. Lastly, this more liberal treatment calls for much larger contributions. The Empire still engages to pay one-third of the premiums, the remaining two-thirds being shared between employers and workmen.

The Empire's share, under the original scheme, was expected to be for the first year about four million marks; under the amended scheme, it would be over twelve million marks. For the sixth year, the Empire's payments would be over twenty-eight millions, as against an estimate of about thirteen millions under the original scheme. The private contributions, of course, go up in the same ratio. This, too, although the esti-

mates rest on a proposal to raise in any year only such funds as will meet the liabilities incurred for the next ten years. Obviously, many of the pensions granted in any one year will run much more than ten years, especially those granted in case of disability. The heavy financial burdens entailed by the scheme account for this proposal to shift to future generations the liabilities of the present.

THE late Comptroller of the Currency, in his report for 1888, calls attention in several places to the symptoms of arrested growth of the national bank system, which are beginning to follow the rapid withdrawal of circulating notes. Facts given in the annual report of the Superintendent of the Banking Department of the State of New York suggest a comparison between the progress of banking under national and State legislation respectively in the most important banking State.

The following figures for the last five years are collected from the two reports, capitals being given in millions:—

	<i>National Banks.</i>		<i>State Banks.</i>		<i>Trust Companies.</i>	
	No.	Cap.	No.	Cap.	No.	Cap.
1884	218	\$83.3	99	\$32.1	18	\$12.
1885	217	81.9	92	32.3	20	14.2
1886	218	81.7	95	32.1	20	15.2
1887	222	85.6	105	33.3	21	16.6
1888	222	85.9	120	35.6	25	19.5

We have no space to remark on these figures at present further than to note two important facts: first, that the growth of banking in the State outside of the reserve cities is now under charters from the State; and, second, that the business and growth of the trust companies, which, with three exceptions of no great importance, are established in New York or Brooklyn, are imperfectly measured by their number and capital. The general law for the organization of trust companies adopted in 1887, *Laws of New York*, 1887, chap. 546, is understood to have stimulated their increase last year, and is likely to make this class of State banks still more formidable in competition with the national system.

THE MARGIN OF CULTIVATION.

The expression "margin of cultivation" has become, through long usage, a classical expression for one of the most fundamental ideas of economics. It may seem out of place to take exception to the use of so well-known a term; yet it conveys the needed idea in a very concrete way, which fitted nicely into the economic system of the older economists, but is not in harmony with the ideas which many of the economists of to-day are striving to develop. It is easy to think of society pushing out continually upon newer lands, or trying to make its poorer lands tillable. The picture of civilization gradually working up a mountain-side is to most persons very alluring; yet the conclusions drawn from this concrete case have enough of the false in them—or, at least, enough of the apparently false—to obscure the real truth to which all agree. And this obscurity is likely to continue as long as a term is used which necessarily brings up a concrete picture.

The term is also defective, since it calls to mind a dynamic state of society. In a static state, where the equilibrium is perfect, there would be no concrete margin of cultivation, as we now picture it. Most economists agree that, even in a static condition, there would be no-rent increments of capital applied to land. These increments would, however, be found upon the first land cultivated, as well as the last. If used in this broad sense, there is also a margin of cultivation in the manufacture of commodities, as well as in the cultivation of land. All portions of the capital used in a factory do not give the same return for their use. Especially in the utilization of waste products, there is much labor employed which gives merely the minimum return. A part of the capital used in factories is as much at the margin of cultivation as is the last increment of capital used upon land. The term, therefore, is defective in many ways; and all economists ought to be willing to allow it to be so modified that the concrete portion may be cast away, without losing the central thought. Professor Clark, in his thoughtful essay before the late meeting of

the American Economic Association, suggested that the term "margin of utilization" be used. Society certainly utilizes its most productive instruments first, and then proceeds to make use of the less productive ones. The change in the term is an excellent one, so far as it goes; yet there is as much objection to the use of the term "margin" as to "cultivation." The dynamic thought is still retained, from which confusion is likely to arise. Why could not the term "limit to utilization" be used? Or perhaps "final limit to production" would be plainer. It might be well to follow the analogy of the term "final utility of commodities," and say "final utilization of productive instruments." I have no desire to urge any term; but, since Professor Clark has made so admirable a start in the right direction, it would seem an excellent opportunity to introduce a new term to which every one could heartily assent.

As an illustration of the use of a broader term, I will refer to the suggestive article in a recent number of this *Journal* by Mr. Sidney Webb. He wishes to locate the position of the man who uses the minimum of capital and ability, and after the traditional custom seeks to find him at the margin of cultivation.* Certainly, the men at the margin have much more than the average ability, and they also make use of a large amount of capital. For these reasons, the use of the term "margin of cultivation" by Mr. Webb obscures a thought of vital importance to a correct correlation of the laws of distribution. The man with minimum ability and capital is much more likely to be found in the cities than upon new land; and such men are in much larger numbers in an old country than in a new one. They sweep our streets and carry off our refuse matter. They are employed in all the factories to utilize waste products, and as assistants to higher classes of labor.

It is only by a wrong classification that it seems that the cheapest labor of our factories use much capital. If a firm use a million dollars worth of capital and employ a thousand men, it is wrong to say that each man uses a thousand dollars worth of capital. Such reasoning is as defective as to say that the utility of the last cup of water is the average of the total utility of the whole supply of water. The proper way to get

* See *Quarterly Journal of Economics*, II. 197.

the amount of capital used by the last man is to discover how much less capital would be used if he were not employed. Measured in this way, the amount of capital used by the least efficient man in a large factory would be zero, or very near that limit. It is likely that several men out of the thousand could be discharged before any of the capital of the firm would cease to be used.

The position of the least efficient laborer shows where the final limit to production is; and it is only as land gets its share of such labor that it can be truly said to be at the margin of cultivation. The lack of mutual relation between the laws of distribution, which Mr. Webb so clearly presents, is partly due to the historical circumstances connected with their gradual development, and partly to the concrete manner in which they have been viewed by economists. It will be necessary to outgrow the limitations arising from the historical development and the concrete expression of these laws, before they can be so stated that the mutual relation between them can be clearly seen.

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ANTI-CHINESE LEGISLATION IN BRITISH AMERICA.

The anti-Chinese legislation of Canada* is very much like that of Australasia. The Chinese Immigration Act, 1885,¹ puts a tax of \$50 on Chinese entering Canada, by vessel or otherwise,² and restricts the number of Chinese a vessel can bring to one for every fifty tons,³ with penalties on the Chinaman, the master, and the owner† for breaches of its various provisions,⁴ similar to those imposed by the Australasian statutes, including forfeiture of the vessel, if the master lands or permits to land any Chinese before the duty is paid, or wilfully makes any false statement respecting the number of persons on board his vessel.⁵ The exemptions from the operation of the act differ somewhat from the usual ones in Australasia.‡ There is no exemption of British subjects, there is an exemption of the suite and the servants of diplomats,⁶ a fee of one dollar is charged for temporary exemption certificates, and such certificates may be obtained by "every Chinese person,"⁷ instead of being obtainable only by *bona fide* residents of the colony at the passing of the act or at the date of its going into

* This paper completes the survey of anti-Chinese legislation in the British colonies begun in the last number of this *Journal*. The references made are, as before, to the Parliamentary blue-book of July, 1888, entitled *Correspondence relating to Chinese Immigration, . . . with a Return of Acts*.

† But no penalty on the charterer, as in the Australasian statutes.

‡ The usual exemptions are British subjects, consuls and diplomats, crews, and Chinese with temporary exemption tickets. Queensland, Canada, and British Columbia, however, do not exempt British subjects; Queensland and South Australia and British Columbia do not exempt consuls and diplomats, and Victoria (p. 74, § 6) and New Zealand (p. 54, § 7) exempt them only from having to pay the entrance-fee, and not from the other provisions of their respective acts; Queensland exempts crews only from the entrance-fee (p. 81, § 11), Canada only by implication (the act applying only to persons "entering Canada," p. 60, §§ 1 and 4), and British Columbia only to the number of 20 (p. 67, § 8; p. 71, § 5). In Victoria, as I have said, there is no temporary exemption. The reports of the new statutes for the Northern Territory and of New South Wales do not give the exemption clauses (p. 4, No. 8, and p. 45, Nos. 39 and 81). There are no exemptions from the Chinese "Tax" and "Regulation" Acts of British Columbia.

¹ p. 60.

² p. 60, § 4.

³ p. 60, § 5.

⁴ p. 60, § 5; p. 61, § 7; p. 62, §§ 16-19.

⁵ p. 61, § 7.

⁶ p. 80, § 4.

⁷ p. 61, § 14.

operation, as in Australia¹ and in British Columbia.² There is an exemption, also, of "tourists, merchants, men of science, and students," bringing certain documentary evidence of their identity, occupation, and object, "merchant" not to include "any huckster, pedler, or person engaged in taking, drying, or otherwise preserving shell or other fish for home consumption or exportation."³ The amendment of June 23, 1887, exempts the wife of any person who is not of Chinese origin.⁴ Section 13 of the principal act (of July, 1885) contains the seemingly needless enactment that "the entrance-fee . . . shall not apply to any Chinese person residing or being within Canada at the time of the coming into force of this act," and that such Chinese person may get a certificate of residence for fifty cents.⁵ Section 2 of the amendment⁶ makes provision for allowing Chinese to pass through Canada without paying the entrance fee. No Chinese are allowed to land "until the quarantine officer has granted a bill of health, and has certified . . . that no leprosy or infectious or contagious disease exists among them," and "no permit to land shall be granted to . . . any Chinese woman who is known to be a prostitute."⁷

Perhaps the most important difference between the Canadian and Australasian anti-Chinese laws is that in Canada the controller must "keep a register of all persons to whom certificates of entry have been granted,"⁸ whether they come by sea or land."⁹ Section 17 of the act of July, 1885, provides for the suppression of "any sort of court or tribunal composed of Chinese persons for the hearing and determination of any offence committed by a Chinese person," but it is

¹ p. 63, § 1. This is the only instance, in the existing anti-Chinese legislation in all these colonies, of a special exemption of women, except in Tasmania, where the act applies only to males (p. 83, § 1), and in Victoria, where it applies to "any male adult native of China, or its dependencies, or of any islands in the Chinese seas not born of British parents [*etc.*], or *any person* born of Chinese parents." (The Italics are mine.) The exemption or non-exemption of women from legislation against Chinese immigration is of little practical importance.

² p. 61. Cf. similar provision in New Zealand in 1881 (p. 87, § 13). Perhaps this is meant, like § 7 of the British Columbia act of 1885 (p. 71), to exempt Chinese who were residents, but temporarily absent, at the time of the passing of the act.

³ p. 77, § 12; p. 79, § 9; p. 81, § 10; p. 83, § 10; p. 85, § 10; p. 87, § 14.

⁴ p. 87, § 6; p. 71, § 6.

⁵ p. 60, § 4.

⁶ p. 63.

⁷ p. 61, § 2.

⁸ p. 61, § 11.

⁹ p. 61, § 12.

not to be construed as preventing Chinese from submitting disputes to arbitration.¹ There is provision, apparently, for the summary trial of some of the suits and prosecutions arising under this act, but not of all.* There is no provision for magistrates deciding "on their own view and judgment" whether a person is a Chinese. Beyond the points I have mentioned, Canadian anti-Chinese legislation differs in no important respect from that of Australasia.

With British Columbia, the case is quite different. The legislation of that province deals with the problem, so far as it is simply a question of Chinese immigration, by forbidding such immigration. "An Act to prevent the Immigration of Chinese,"² February 18, 1884, enacts that, "whereas it is expedient to prevent the immigration of Chinese into British Columbia,"³ "it shall be unlawful for any Chinese to come into the province,"⁴ and lays penalties upon any Chinese who hereafter shall come in⁵ and upon "any person who shall bring or assist in bringing into British Columbia any Chinese or who shall assist in any way any Chinese in coming into British Columbia,"[†] the penalties to be enforced by rapid and summary procedure,[‡] the justice deciding, "upon his own view and judgment," whether any person charged or brought before him is a Chinese or not.[§] The act does not apply to "any Chinese actually employed as seaman, cook, steward, or waiter upon any vessel, wherein the number of Chinese so employed shall not exceed twenty."[¶] Temporary exemption certificates are granted to Chinese who were *bona fide* residents of the province at the time of the passing of the act, and who shall have their photographs taken at their own

* p. 62, § 22. All suits and all prosecutions for offences that are not made misdemeanors "shall be tried before one or more justices of the peace, or before the recorder, police magistrate, or stipendiary magistrate having jurisdiction."

† p. 66, § 3. The penalty upon the Chinese is only \$50, the amount of the usual entrance-fee; but the penalty on any one assisting him is sufficient to prevent anybody from paying his entrance-fee for him and from transporting him. He would have to walk from the United States or Canada, and would have to pay his entrance-fine some time, even if he has served his six months' imprisonment at hard labor for not doing so at first. (p. 66, § 2.)

¹ p. 62.

² p. 66.

³ p. 66, § 2.

⁴ p. 66, §§ 2-4.

⁵ p. 67, § 7.

[¶] p. 67, § 5.

expense, a copy to be kept and marked with the number of the certificate.¹

The act of March 9, 1885, contains no allusion to the above act, although they are almost precisely alike. The only differences are that the act of 1885 adds those Chinese who had been previously to its passage *bona fide* residents of the province to the number who can obtain temporary exemption certificates,² makes provision for the return to the province, "free from the provisions of" the act, of any Chinese who had resided there within a year before the passing of the act, but who, at the time of its passing, were temporarily absent, and for the issue of a certificate to that effect to every such Chinese,³ but also enacts that "it shall be lawful to impose a fee of \$5 for every certificate to be granted under the provisions of this act."⁴

The Chinese already in British Columbia are dealt with by an act of Feb. 18, 1884, which prevents them from acquiring crown lands (and from being granted authority by "a commissioner, as defined by the 'Land Act, 1884,' or any other person, to . . . record or divert any water from the natural channel of any stream, lake, or river" in the province),⁵ and by the "Chinese Tax Act, 1878," and the "Chinese Regulation Act, 1884," which "tax" and "regulate" them as follows:—

The "Chinese Tax Act," after stating in the preamble that the Chinese "evade" certain taxes "by reason of the provisions of the acts [imposing them] not being applicable for the collection of taxes from Chinese,"⁶ provides that those acts "shall not apply to Chinese, but, in lieu thereof, the following provisions shall be substituted: . . . every Chinese person over twelve years of age shall take out a license every three months, for which he shall pay the sum of ten dollars in advance,"⁷ the collector being paid by a percentage on what he collects,⁸ and having power to levy the amount of the license with costs, by distress not only of the goods of the Chinese person who has no license, but also "of any goods and chattels in his possession, . . . or of any goods and chattels found on the premises, the property of or in the possession of any other

¹ p. 67, § 6.

² p. 71, § 6.

³ p. 71, § 7.

⁴ p. 71, § 8.

⁵ p. 66, No. 4.

⁶ p. 68.

⁷ p. 63, § 2.

⁸ p. 64, § 3.

occupant of the premises.”¹ If a Chinese has not a license lawfully issued to him, he *and his employer* are *both* liable to severe penalties;² and he is also liable, under penalty for failure, refusal, or neglect,³ to work out the amount of the license fee on the public roads, at the rate of fifty cents a day, *minus* the cost of food, five per cent. for the wages of an overseer, and five per cent. for the wear and tear of tools,⁴ the day's work being ten hours.⁵ A Chinese must show his license on passing through certain toll-gates.⁶ Every employer of Chinese must, under penalty,⁷ furnish to the collector, when requested, a truthful list of all the Chinamen employed by him, directly or indirectly,⁸ and must keep in his possession the license of each Chinaman in his employ, and show it to the collector when required to do so.⁹ “Any information for any infraction of . . . this act may be heard and determined . . . in a summary manner.”¹⁰ In any prosecution for its infraction, the averment in the information that the Chinese had not at the time of the alleged infraction a license, lawfully issued to him, throws upon him the burden of proving that he had.¹¹ The same burden rests upon the person whose goods are distrained for being in the possession of or on the premises occupied by a Chinaman without a license, if the license is not produced.¹²

The “Chinese Regulation Act, 1884,” begins by stating, among other things, that the Chinese “evade the payment of taxes justly due to the government, are governed by pestilential habits, are useless in instances of emergency, habitually desecrate graveyards by the removal of bodies therefrom, . . . and . . . are inclined to habits subversive of the comfort and well-being of the community.”^{*} It imposes an annual fee of \$10 on every Chinese above the age of fourteen.¹³ Its other provisions are similar to those of the “Chinese Tax Act,” except the following: A Chinaman must show the license required by the new act at *every* toll-gate in British Colum-

^{*}p. 67. Cf. letter of Low Ta Jên to the Earl of Rosebery (p. 54, Appendix L.), characterizing this preamble.

¹p. 64, § 7. ²p. 64, § 2. ³p. 65, § 14. ⁴p. 64, § 12. ⁵p. 65, § 12. ⁶p. 65, § 16.

⁷p. 64, § 6. ⁸p. 64, § 5. ⁹p. 64, § 11. ¹⁰p. 64, § 10. ¹¹p. 64, § 2. ¹²p. 64, § 7.

¹³p. 67, § 2.

bia.¹ A "free miner's certificate" costs a Chinaman \$15 instead of \$5,² which is the charge for all other foreigners;³ and, if he engages in mining in contravention of the provision requiring him to have such certificate, he and his employer are each liable to a penalty not exceeding \$30.⁴ Dead bodies of Chinese are not to be exhumed without permission.⁵ The use of opium is prohibited, except for medical purposes.⁶ Rooms must not be let or occupied unless containing 384 cubic feet of space for each person occupying them, and having each a window which opens at least two square feet.⁷ In any proceedings under the act, the burden of proving that he is exempt from the operation of any of its provisions is on the defendant.⁸ Pecuniary penalties may be recovered in a summary way.⁹ Convictions shall not be quashed for want of form,¹⁰ so long as the same is according to the true meaning of the act;¹¹ and the tribunal having cognizance of any matter under the provisions of the act may decide, upon its own view and judgment, whether any person is a Chinese, and whether any person who is a Chinese is of the age of fourteen.

A Chinese convicted of an offence under the act cannot appeal without giving notice in writing of his intention of doing so, furnishing security in the sum of \$100, conditioned to abide by the decision, and depositing a sum sufficient in the opinion of the convicting magistrate to pay "the costs and expenses of a jury" to try the appeal.¹²

It appears from the letter of Lew Ta Jên to the Earl of Rosebery, which I have cited, that this "Chinese Regulation Act" has been held by the Supreme Court of British Columbia, in the case of *Bull v. Wing Chong*,¹³ to be *ultra vires* the Legislative Assembly of that province.

JOSEPH LEE.

* The above-cited letter of Lew Ta Jên.

† p. 70, § 28. Another new provision is that of Section 16, which reads, "Sub-section (4) of the Schedule A to the 'Licenses Ordinance, 1907,' is hereby amended by adding thereto the following words: 'But no license shall be issued to any Chinese.'"

‡ p. 56, Appendix I. This decision was in August, 1905. See *British Columbia Law Reports*, vol. II., part 2, p. 150.

¹ p. 65, § 12.

² p. 65, § 14.

³ p. 65, § 15.

⁴ p. 65, § 17.

⁵ p. 65, § 18.

⁶ p. 65, § 23.

⁷ p. 65, § 19.

⁸ p. 65, § 20.

⁹ p. 70, No. 7.

¹⁰ p. 65, § 20.

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APPENDIX.

ITALIAN FINANCES FROM 1860 TO 1884.

BY ALANSON BIGELOW HOUGHTON.

II.

a. FROM 1866 TO 1880.

WE have now traced the financial history of Italy down to the time when affairs reached a culmination in suspension. For the rest, it remains for us briefly to consider first the course of events until 1880, and then the measures taken in 1881-83 to secure resumption.

The one political event during the period 1866-80 which concerns us is the occupation of Rome in 1870. From this time on there was an end to the great political questions that had so long been prominent in Italian life. For fifty years the radical parties* had been striving to make Rome the capital of a new Italy. The Franco-German war gave the long-coveted chance. France had too much on her hands to interfere. And scarcely had the red breeches of the French troops been seen marching out of Rome, when the Italian troops came marching in. Rome was annexed to the kingdom and became its capital, and the Roman debt† was assumed and consolidated by the State.

The legal limit of the paper circulation‡ before the suspension had been merely the provision that the National Bank, the National Bank of Tuscany, and the Tuscan Bank of Credit could issue paper to three times the amount of their specie reserves, the Bank of Naples and the Bank of Sicily issuing only certificates of deposit. After the suspension, the two

* H. v. Treitschke's *Historische und Politische Aufsätze*, p. 399.

† *Bullettino Ufficiale*, 1883, p. 315 et seq.

‡ Sachs, *L'Italia*, pp. 599, 600.

latter were permitted to issue to twice the amount of their specie reserves; and in October, 1866, the right of a triple circulation was extended to the Bank of Naples.

By the decree of May 1, 1866, a forced circulation was given the notes of the National Bank in all the kingdom, and to the notes of the Bank of Naples and of the Bank of Sicily in the Neapolitan provinces and in Sicily respectively, and later in the month to the notes of the two Tuscan banks within the Tuscan provinces. These banks, excepting the National Bank, were required to set apart at once and retain as an inalienable reserve at least two-thirds of their specie, and the National Bank was directed to furnish them gratuitously with its notes to an equal amount. A distinction was made, therefore, in that, while the notes of the National Bank had a circulation throughout all Italy, the notes of the other banks could circulate only within certain defined limits of territory. The National Bank was instructed to advance to the State, on deposit of securities, its notes to the amount of 250 mil. These notes were not to count as part of the bank's authorized circulation: they formed a separate debt, and became the first instalment of what later grew to be the very considerable amount of the government paper currency. Obviously, the notes of the National Bank played an important part in these transactions; for, in addition to their other functions and privileges, they formed in fact a State paper currency as well.*

An effort was made by the Government to hold the amount of its paper indebtedness at 250 mil.; but the pressure became too strong to be resisted, and after 1867 the amount grew steadily larger. Scialoja declared † to the Committee of In-

* Unfortunately, the decree made no provision for the case of a withdrawal of the small coin, since the forced circulation was given to the paper of the denominations already in existence, and the smallest note issued was for 20 lire. Naturally, as soon as the suspension was decreed, all the coin forming the subsidiary circulation instantly disappeared. This created at once a great need. In order to take the place of the small silver pieces, many savings-banks, pawn-shops, and other institutions of credit in places where the scarcity made itself most felt, put out small notes equal in denomination to the metallic types that had disappeared. These notes received no authorisation by law. But they were a necessity; and by virtue of this fact they multiplied and circulated without authorization. *Vide Journal des Economistes*, March, 1873, p. 481.

† *Inchiesta*, vol. III. p. 473, Scialoja's testimony.

quiry that he had not intended to make use of the forced currency beyond the limit of the 250 mil. necessary for the war: he believed, indeed, that payments in specie would be, in whole or in part, resumed in 1867. In that year, an effort was made by him to secure gold for this purpose; but his attempt was met by complete failure. In the succeeding year, Scialoja's successor, Ferrara, tried the same experiment, and with the same result. After this time, the problem of lifting the *corso forzoso* became the one great problem* for each succeeding minister.

The amount of paper money crept steadily higher and higher, until at length it became evident that the issue must be restrained, and the law † of the 30th of April, 1874, was passed. Down to this time, the conditions under which the banks could issue were decidedly lax. The only limit fixed to the issue of notes was that they should bear a certain proportion to the metallic reserves, while the amount of the metallic reserves was left quite undetermined, and this, in the words ‡ of M. Fouriel, was "not liberty, but license." The law of April 30 is of the very highest importance, in that it was the great preliminary step towards resumption. By this law the issue of notes was strictly confined to six banks of emission,—the five former banks of emission and the Roman Bank.§ These six banks were to form a syndicate, known as the *Consorzio*, which should furnish to the treasury notes not to exceed in amount one million of lire. The *Consorzio* was to make and renew these notes at its own expense, in return for which ser-

* Cf. Sachs, *L'Italia*, pp. 608-616; also, *Mesures Proposées pour l'Abolition du Cours Forcé*: Exposé des Motifs et Projet de Loi présenté à la Séance de la Chambre des Députés du 15 Novembre, 1866, par M. Magliani, Ministre des Finances (et du Trésor Intérieur) de concert avec M. Miceli, Ministre de l'Agriculture, de l'Industrie, et du Commerce, Rome, 1861, pp. 15, 16. I have throughout this article referred to the French translation of this report, as being more generally available than the Italian original.

† Those portions of this law which were not afterwards repealed by the law of April 7, 1881 (*vide* p. 306 of this article), may be found in the *Bullettino Ufficiale*, 1874, pp. 289-295. Cf. also *Dictionnaire des Finances*, publié sous la direction de Léon Say, pp. 344-347; Sachs, *L'Italia*, pp. 610-614; and Cucheval-Clarigny, *Les Finances de l'Italie*, pp. 8, 9.

‡ *Revue Internationale*, August, 1864, p. 671.

§ Formerly the Bank of the Pontifical States.

vice the State agreed to pay on them a small annual tax of $\frac{1}{10}$ of one per cent. for the first four years, and of $\frac{1}{15}$ of one per cent. afterwards. The notes were to have a forced circulation, as by the decree of the first of May, 1866, and the banks jointly were to be responsible for them, the government on its part securing the banks by a deposit of *tîres* of the public debt. These notes were to replace the notes which the State had previously received; and the separation of the State paper from the notes of the National Bank was thus made complete. Further, the notes issued by the banks on their own account were to continue to be a legal tender as before for two years more,—this duration of time was afterwards again and again extended,—but they were to be redeemable either in specie or in *Consorzio* notes. The maximum of the note circulation was put at three times the paid up capital, estimated for each bank from its amount* on December 31, 1873; but at least one-third of the notes in circulation must be secured by metallic money, and the remainder by discounts and advances on *tîres*. This served to fix the total note issue at a maximum of 755 mil. Special provision, however, was made by which the State in times of commercial distress or of extraordinary need could raise this limit; but the total amount of the supplementary notes could never exceed $\frac{1}{10}$ of the capital, and the time during which they might remain in circulation could not exceed three months. The law was very ingenious. Besides separating the notes issued for the State from the notes of the National Bank, it put the paper circulation within limits, which, while checking any abuse the banks might make of their power of private issue, were at the same time not iron-bound. And, by forcing the banks to redeem their notes either in specie or in notes of the *Consorzio*, it kept the private issue of notes on a par with those issued for the Government. In reality, the notes of the *Consorzio* alone now had a *forced* circulation, the notes of the separate banks being redeemable either in specie or in *Consorzio* notes, and so having a *legal* circulation only.

* *Annuario Statistico Italiano*, 1873, Parte II., pp. 115-121.

The growth of the paper circulation during the period now under consideration is exhibited in the following table,* the amount of both government and bank notes being shown : —

Year.	For the State.	For the Banks.	Total.
31 Dec., 1866	250.	245.9	495.9
1867	280.	457.0	737.0
1868	278.	563.1	841.1
1869	278.	570.7	848.7
1870	445.	497.4	942.4
1871	620.	577.6	1,206.6
1872	740.	633.4	1,363.4
1873	790.	664.3	1,454.3
1874	890.	633.3	1,513.3
1875	940.	631.3	1,561.3
1876	940.	646.0	1,586.0
1877	940.	638.6	1,568.6
1878	940.	672.3	1,612.3
1879	940.	733.4	1,673.4
30 Sept., 1880	940.	734.9	1,664.9

These figures disclose at once the effort made by the State to keep down its borrowing until 1870. From 1870–75 there is a sharp increase; and, from 1875 on, the amount stood at 940 mil. The circulation of the banks, on the other hand, following more closely the natural demand, shows a steady growth during 1867–69, although this increase is by no means as rapid as that of the State notes from 1870–75.

Two points are to be noticed in connection with the paper currency,— the premium on gold, and the course of the *rente* at home and abroad.

The premium on gold was a heavy burden for Italy. According to Magliani, Minister of Finance after 1876, Italy paid a discount,† owing to the depreciation of her paper money, on exports and imports of 10 per cent.; and this discount went up, at times, even to 16 and 17 per cent. Even as late as 1879, when the possibility of a speedy resumption of specie payments became strong enough to be felt in the markets, there is no sign of a falling premium on gold. As time goes on, however, between the maximum and minimum rates ‡ there is less difference, and the fluctuations are not so great : —

Year.	Average.	Maxim.	Minim.	Year.	Average.	Maxim.	Minim.
1 May, 1866	7.51	20.50	1.35	1 May, 1874	12.35	16.95	9.50
1867	7.37	13.49	4.57	1875	8.37	10.30	8.15
1868	9.53	15.15	5.30	1876	8.47	9.65	7.35
1869	3.94	5.73	2.63	1877	9.63	13.75	7.65
1870	4.89	12.10	1.73	1878	9.43	11.00	7.90
1871	5.35	7.50	3.55	1879	11.19	14.80	9.08
1872	8.66	14.95	6.70	30 Sept., 1880	10.53	13.05	8.75
1873	14.31	17.65	10.00				

* *Mesures Proposées*, pp. 13, 86.

† *Ibid.*, p. 14.

‡ *Ibid.*, p. 4.

The credit of the State, on the whole, beginning with 1868, steadily rose. We may see this by examining the price of the Italian 5 per cent. consolidated* in Italy and in Paris, taking the average rate year by year, remembering that the Italian price is in paper and the French price in gold : —

Year.	Italy.	Paris.	Year.	Italy.	Paris.
Cal. y'r 1866	65.23	65.46	Cal. y'r 1873	70.75	63.03
1868	56.54	54.06	1874	70.00	65.34
1867	53.23	50.62	1875	75.11	71.61
1869	55.20	51.06	1876	75.40	71.60
1868	57.13	55.42	1877	75.03	70.43
1870	57.13	54.23	1878	78.79	73.94
1871	63.85	60.94	1879	85.80	78.99
1872	73.63	68.36	7 Oct., 1880	90.35	84.43

In the years covered by this table, a great change had come over the holding † of the Italian funds. In 1865, for instance, 33.8 per cent. of the consolidated 5 and 3 per cents., or 78 mil., were held by foreign creditors; in 1875, only 17 per cent., or 52 mil., were in foreign hands; and in 1879 only 19 per cent., or 68 mil., were held abroad. But, besides this, it will be noticed that after 1874 the 5 per cents. were higher in the French market than in 1865; and after 1876 the general upward movement becomes strong and firm.

It is evident that so long as the expenses exceeded the receipts, so long as continual recourse must be had to borrowing at home or abroad, so long the State could not permanently get rid of the forced currency. "The essential condition," declared Magliani,‡ "for putting an end to the *corso forzoso*, is that the budget should not only be in equilibrium, but show an excess of receipts." This equilibrium was not established until 1875. After that date, the receipts exceeded the expenditures, and definite steps could be taken towards resumption.

The budget § history from 1866 to 1880 falls naturally into three periods,—the first extending from 1866 to 1870, the second from 1871 to 1874, and the third from 1875 to 1879. We may say a word concerning each : —

		Receipts.	Expenditures.	Deficits.
(a)	1866	617.1	1,338.6	721.5
	1867	714.5	928.6	214.1
	1868	768.6	1,014.4	245.8
	1869	870.7	1,012.6	141.9
	1870	898.4	1,080.7	214.3

* *Mesures Proposées*, p. 17.

† Sachs, *L'Italia*, pp. 486, 487.

‡ *Mesures Proposées*, p. 18.

§ *Annuario*, 1884, pp. 1065-68.

The first period was very gloomy, and during it Italy sank to perhaps the lowest level she was forced to touch. In these five years the aggregate deficit amounted to 1,550 mil. *Rente* averaged 55.46 at home and 52.96 in Paris, frequently falling to 45 and even lower; and such a price of course made an appeal to public credit impossible. Accordingly, the measures to combat the deficits fell directly on the people, and were necessarily severe. The most rigid economy was observed; every expense not absolutely necessary was refused; and a watchful saving was carried into even the *minutiae* of every department. While the outgo was thus held nearly at a minimum, the income was increased regularly from year to year. Various means were employed to this end. The State paper money went up in amount from 250 mil. in 1866 to 445 mil. in 1870. The suppression of the religious corporations and the liquidation of the ecclesiastical estates furnished a steady, though not over-large, income. But the real stress fell on the taxes, which, especially those on consumption, were either raised or extended in a very great degree. Some of the principal tax-yields* were, in mil. of lire:—

Year.	Manufactures.	Personalty.	Grist-tax.	Successions.	Registration.	Stamps.	Entireties.	† Tobacco.	Salt.	Customs.
1866	39.18	28.35		11.43	26.06	18.31	4.77	85.51	58.18	64.83
1867	40.78	74.57		12.72	27.33	26.46	4.23	93.86	65.17	71.33
1868	40.46	2.32		12.87	26.46	26.61	4.56	94.87	72.17	73.77
1869	43.82	81.23	24.05	12.86	34.72	27.00	5.77	98.75	71.32	79.11
1870	44.34	64.89	30.10	17.96	34.45	27.69	5.89	99.39	72.06	72.37

In the face of the pressing needs, the grist-tax, by far the most unpopular tax that could be laid, was decreed in 1868; and, although its product fell far short of what was expected, yet the 24 mil. in 1869, and the 30 mil. it yielded in 1870, could not be spared by the State. All in all, the total tax-yield increased from 637 mil. in 1865 to 801 mil. in 1870.

	Receipts.	Expenditures.	Deficit.
(b) 1871	988.9	1,049.9	74.0
1872	1,014.0	1,097.6	83.6
1873	1,047.3	1,128.3	80.0
1874	1,077.1	1,090.5	12.4

* *Measures Proposées*, p. 49.

† Sum of sales.

The second period makes a strong movement for the better. These were the years of great speculation,—a speculation which, in spite of its excess, seemed to breathe the breath of life into Italian credit and industry. The banks, for instance, carried up their loans from 464 mil. in 1870 to 846 mil. in 1874.* The aggregate deficit for four years was only 260 mil.,—less than the deficit of any single year from 1860–66. Here, as before, one will notice that the expenditures, excepting the panic year 1873, rise but slightly, while the receipts increase steadily and rapidly. Some of the principal tax-yields again were, in mil. of lire:—

Year.	Manufactures.	Personality.	Grain.	Successions.	Registration.	Stamps.	Railways.	Tobacco.	Salt.	Customs.
1871	43.94	72.03	43.91	20.23	35.90	33.05	6.71	104.96	74.03	31.40
1872	50.23	79.31	54.46	24.07	47.30	33.55	8.20	111.56	76.06	37.59
1873	63.09	80.37	64.36	23.15	49.13	34.51	6.04	116.61	76.31	36.71
1874	58.18	87.96	66.66	23.80	50.11	34.08	9.45	119.00	77.93	100.56

These figures, however, do not tell the whole truth. The circulation of the State paper went up in amount from 445 mil. at the end of 1870 to 880 mil. at the end of 1874,—in other words, almost doubled; and this increase of 435 mil. was of course only a disguised loan. An open appeal to the public credit, as a glance at the course of the *rents* shows, was quite out of the question. Still, this surreptitious borrowing was very objectionable, for it was subject to the ruinous discount of a depreciated paper currency.

(c)		Receipts.	Expenditures.	Surplus.
	1875	1,006.3	1,082.4	13.9
	1876	1,135.3	1,103.9	31.4
	1877	1,180.8	1,157.9	22.9
	1878	1,191.6	1,177.1	14.5
	1879	1,223.1	1,165.3	42.3

The third period marks the change from a deficit to a surplus. These five years show an aggregate surplus of 114 mil.; and, although the expenditures now began to force themselves up year by year, the receipts show a steady increase, which more than counterbalanced this growth. The credit of the State showed a marked improvement. *Rents*, which had

* *Measures Proposed*, p. 53.

stood for the year 1874 at about 65 in Paris and at 70 in Italy, rose in 1879 to 79 in Paris and to 85.60 in Italy. Considerable improvements were entered upon. The need of more and better organized railways in particular was severely felt, for the old lines, utterly insufficient in themselves, had been laid down with an eye mainly to provincial needs, and were generally unfitted for national purposes. The State had been active since 1870 in building, but a still further scheme of construction was now entered upon. In 1876, the Left finally secured a sweeping majority in the Chamber; and after this we hear no more of ministerial weakness in the treatment of the finances because of insufficient or doubtful support. The Left came into power with free hands, and set itself earnestly to solve the two great problems,—the abolition of the grist-tax and the redemption of the forced currency. The latter was at this time impossible. Italy was not yet in a position to deal with so great a financial question as the transformation of the currency, and there was nothing but to wait and let affairs take their course. The task of doing away with the grist-tax, however, was entered upon in earnest; and the end of the period marks the first step towards the lifting of this most obnoxious burden. The leading tax-yields were, in mil. of lire:—

Year.	Mans/rectures.	Personality.	Grist-tax.	Successions.	Registration.	Stamps.	Railways.	Tobacco.	Salt.	Customs.
1875	55.95	92.00	78.64	27.14	51.55	26.70	15.19	129.22	78.26	184.18
1876	54.38	97.26	82.62	24.88	50.99	27.77	12.88	122.53	79.88	95.33
1877	55.80	99.19	82.14	27.27	57.17	29.08	12.08	141.52	80.65	100.63
1878	56.24	95.81	83.54	26.46	52.88	29.99	12.08	141.26	80.28	105.36
1879	61.45	98.78	75.68	25.49	52.85	29.65	12.53	146.22	80.24	120.92

Looking at the years 1866–79 as a whole, we see that, with the exception of the year 1873, the expenditures do not reach 1,100 mil. until 1876, and that in 1879 they are only 1,186 mil., as against 928 mil. in 1867. The receipts increased each year, 1870 excepted; and from 1867 to 1879 they show a rise from 714 mil. to 1,228 mil.

A more detailed examination of the budget is for our purpose unnecessary. The one fact of importance is that the

equilibrium was established and maintained, and this the figures above given abundantly demonstrate. But we will pause for a word of explanation concerning two features especially prominent in these years,—the treatment of the church estates, and the grist-tax, already mentioned.

Concerning the former, there is little to say, for its importance is rather political and social than financial. In 1862, as we have seen, a law* was passed by which all those church estates that had passed to the public domain by virtue of earlier laws were to be sold. At this time, the State still recognized those religious corporations and orders which had for their aim either education or the care of the sick. This recognition was now taken away. By the law† of the 7th of July, 1866, all religious corporations and orders‡ were suppressed. Their patrimonies passed to the State; and, in return, an amount of *rente*, equal to their annual revenue less the tax on mortmain and 5 per cent. for administration, was set apart in the form of a Fund for Worship, out of the income of which were to be paid pensions to the members of the suppressed orders, and the budget expenses for Catholic worship. This law reduced all monks and nuns to the condition of ordinary citizenship. In the following year, by the law§ of the 15th of August, 1867, the suppression was carried still further, and the liquidation of the church estates entered upon *in extenso*. The State now refused to recognize any institutions—abbeys, priories, chapters, or the like—which, under any title or name, were generally qualified for the purpose of worship. All the church estates, whether they had fallen under previous laws or not, were to be subject to an extraordinary tax of 600 mil.,—an amount equal to one-third of their estimated value,—which was to be levied in part on

* *Annali di Statistica*. Serie 2a, vol. iv. 1872. Notizie, Storiche, e Statistiche sul Riordinamento dell' Asse Ecclesiastico nel Regno d' Italia, pp. 16-44. Cf. also *Legge sull' Amministrazione del Patrimonio dello Stato, e sulla Contabilità Generale*, annotata dall' avvocato A. de Cutio. Torino, 1863. (See Index.)

† *Ibid.*, p. 44 et seq.

‡ *Italy, Present and Future*, A. Galega, London, 1867, vol. i. p. 292: "In 1865, . . . the Italian Kingdom still harbored within its boundaries 2,382 religious houses,—1,506 for men, 876 for women,—with 26,901 inmates, 14,807 monks and 14,184 nuns."

§ *Annali di Statistica*, p. 55 et seq.

the *rente* set apart for the Fund for Worship, and, for the rest, on the value of the estates themselves. This meant, practically, the confiscation by the State of one-third of the value of the church estates. For the remaining two-thirds, the State made over in favor of the owners an amount of *rente* equal to their annual income, under the same deductions as before; and the property fell to the government. Somewhat elaborate arrangements were made to facilitate the sale of the estates, but in spite of all efforts this necessarily proceeded slowly.

These laws form the gist of all the legislation in regard to the church estates. By their application, the government managed to squeeze a considerable sum of money* out of the Church. From the law of August 15, 1867, a sum of 579.4 mil. was secured; from the law of August 10, 1862, for Sicily, 117.4 mil.; and from other laws, 76.4 mil.: in all, a nominal sum of 773.2 mil. was obtained. In fact, the yield was considerably less than this; for numerous deductions from the selling prices had to be made, so that on the whole, the results were not of great importance.† The buildings, which answered well for convents and monasteries, were of little use for anything else: neither as schools nor as barracks nor as hospitals were they of much service. This is no place to enter into a discussion as to the ethics of the conversion of the church estates. The State needed money, and the conversion of the estates to its use undoubtedly afforded valuable aid. But, whatever the means by which the Church had acquired this property or whatever the influence of the Church itself, it can hardly be denied that the story of the treatment of the *asse ecclesiastica* is a somewhat shameful one for Italy.‡

The grist-tax (*macinato*) was first laid in 1868. For several years, successive ministers had been asking for it,—Sella in 1865, Ferrara in 1867; but it was felt on every hand to be so objectionable because of its intense unpopularity, touching, as it did, the very bread that went into people's mouths, that the Chamber would not grant it. Still, every one believed that it would yield a large income; and gradually this came to

* *Annuario*, 1894, pp. 126, 127.

† Ocheval-Clarigny, *Les Finances de l'Italie*, pp. 4, 5.

‡ *Ibid.*, pp. 18-57; Sella, *L'Italie*, pp. 287-295; *Annuario*, 1894, Table VII.

be the decisive point. The opposition to it weakened in the face of the steady deficits and the depreciation of the *rente*, and finally, by a law of the seventh of July, 1868, the Chamber consented to its imposition. A charge of 2 lire per quintal was laid on wheat, of 1 lira on maize and rye, of 1.20 lire on oats, and of $\frac{1}{2}$ lira on other cereals. The mills were divided into four classes, according to the amount of production; and every miller paid a tax regulated, under conditions, by the number of turns of the mill-stone, to which a mechanical counter was affixed. The yield of the tax proved, however, a great disappointment. Instead of the 80 or 90 mil. anticipated, the tax produced in 1869 only 24 mil. and in 1870 but 30 mil.; and not until 1876 did the yield equal the estimated amount. On June 16, 1874, a further law was passed, by which certain reforms were introduced to bring about a greater exactness in measuring the production, and the tariff itself was somewhat altered. The tax on wheat was left at 2 lire per quintal; but that on the inferior cereals—oats, maize, rye, and barley alike—was put at 1 lira per quintal. After 1876, when the Left obtained their majority in the Chamber, vigorous efforts were directed towards abolishing the tax. The Sicilian deputies made the question a direct issue with the government. The Neapolitan provinces, which had paid but 6 fr. per head of taxation under the Bourbons, and had had their taxes more than sextupled under the new kingdom, put the grist-tax among their greatest grievances. At length, on the seventh of July, 1878, the Chamber decreed that the abolition of the tax should begin on the first of July, 1879. The tariff on corn was lowered one-fourth (from 2 lire to $1\frac{1}{2}$ lire), and the tax on inferior cereals was entirely done away; and the date for the total cessation of the tax was fixed for the first of January, 1883. The Senate, however, demurred. A strong feeling was shown against throwing away 80 mil., without any assurance of an equal revenue in its place; but, after some debate, the abolition of the tax on inferior cereals was acquiesced in, while the project for lowering the tax on wheat was refused, and the restriction of time within which the tax must cease entirely was removed. The upshot was that the tax on wheat was left unaltered, and that on inferior cereals repealed. This was a change almost

for the worse instead of the better, for it was singularly unfair. Venetia, for instance, consumed 2.07 quintals per head of inferior cereals and only 0.53 quintals of wheat, while Sicily consumed 1.78 quintals per head of wheat and only 0.02 quintals of inferior cereals. The subject was immediately taken up again. The Minister of Finance, Magliani, showed that, owing to the fact that the budgets now yielded a normal surplus, by means of further taxation—notably on tobacco, sugar, coffee, and spirits—the repeal of the tax was both possible and desirable. And by a law* promulgated on the nineteenth of July, 1880, it was finally decreed that on the first of September, 1880, the tax on wheat should be reduced to 1.50 lire per quintal, and after the first of January, 1884, should entirely cease.

The general economic condition of Italy in the years 1866–80 showed a steady gain. Credit was expanding, industry was rapidly developing, and even while the State finances were in their worst confusion there seems to have been a strong growth of production, and in trade of every kind.

In her special commerce, as we have seen, Italy exported in 1865 to the value of 558 mil., and imported to the value of 965 mil. In 1879, the exports had grown to 1,101 mil., and the imports to 1,262 mil. There was still a balance of trade against Italy, but the relation of exports and imports had greatly changed. The value of the exports in 1865 was only 56 per cent. that of the imports; in 1879, it was 87 per cent. The exports had nearly doubled in value, making a gain of 97 per cent., while the imports had gained but 30 per cent. We may compare this result with the fact that from 1867 to 1879 the foreign trade of France increased only 32 per cent. and that of England 20 per cent. The results of the special commerce† were, in millions of lire:—

Year.	Imports.	Exports.	Difference.	Year.	Imports.	Exports.	Difference.
1865	965	558	—407	1873	1,373	1,162	—111
1866	870	612	—238	1874	1,375	985	—390
1867	936	740	—196	1875	1,315	1,094	—183
1868	866	787	—100	1876	1,337	1,217	—110
1869	967	792	—165	1877	1,156	968	—188
1870	966	736	—120	1878	1,070	1,045	—25
1871	904	1,005	+101	1879	1,302	1,101	—161
1872	1,126	1,167	—19	(to Sept.) 1880	907	804	—73

* *Annuario*, 1881, p. 160 (Amministrazione).

† *Mesures Proposées*, p. 23.

We may put this in another way.* In 1866, the amount per head (reckoned in gold) of imports was 35.52 lire; in 1874, 41.64 lire; and, in 1879, 40.22 lire. The amount per head of exports was: in 1866, 25.20 lire; in 1874, 32.18 lire; and, in 1879, 35.06 lire. Or the average per head of imports in the years 1865-67 was 36.97 lire, and in 1878-80 was 37.71 lire; while the average of exports was in the former period 25.74 lire, and in the latter 34.69 lire.

In manufactures,† if we consider how backward was Italy's condition, the growth was strong and noticeably steady. The silk industry has always been one of her most important pursuits. From 1860-65, the silk industry was so miserably depressed that revival seemed almost hopeless. A start was made, however; and, beginning with 1870, the progress was rapid. In 1880, there were more than two million spindles at work; and it is estimated that from 1870-80 Italy more than doubled her workers.‡ The competition of Asiatic silks, too, had pushed the spinning and weaving to great perfection. Cotton spinning had likewise made a great advance. In 1865, the industry was almost at a standstill. There were scarcely 30,000 spindles at work, and these in a poor condition; and but one print factory was in existence. In 1880, over a million good spindles were at work, together with 70,000 hand-loom and 15,000 power looms, and the number of print factories had increased to four. The importation of cotton yarn fell in the three years 1877-79 from 136,000 quintals to 65,000 quintals. In the construction of machines and of apparatus of all sorts, there were employed in 1872 about 26 mil. lire and 12,000 men; but in 1880 these figures had risen to 36 mil. lire, and more than 15,000 workmen. Indeed, there was scarcely a branch of industry to be found—excepting, perhaps, the wool industry—that did not show a similar

* *Atti Parlamentari*, 1861, p. 3541. Speech by Luzzati.

† Vide *Moeurs Proposées*, pp. 47-51; *La Statistica di Alcune Industrie Italiane*, estratto dall' *Archivio di Statistica*, Anno IV., Rome, 1879, *vide index*; *Annuario Statistico Italiano*, 1878, p. 120 *et seq.*; *Saggio sul Commercio Esterno*, terrestre e marittimo, del Regno d' Italia negli anni 1863-63, Firenze, 1865, pp. 281-287; Sachs, *L'Italia*, pp. 303-307, etc., etc.

‡ *Journal des Économistes*, March, 1884, p. 373. The number increased from 14,000 to 30,000.

advance. The most diverse branches bore witness to this. Paper-making had grown so that 80,000 quintals were exported yearly; sugar-refining, though a new industry, promised to supply the needs of the country soon; and the distillation of spirits already provided for two-thirds the home consumption.

It is to agriculture,* however, that we must look to see the most unequivocal signs of progress in Italy. In spite of a rapid increase of population,† Italy was able to import 119,000 tons of cereals less between 1875-79 than between 1861-65. This was due in part to the great improvement of agriculture, especially in the north, but in part also to the fact that a great mass of unproductive lands which had been lying idle had become productive, owing to the policy of the government of granting the land to those who were able to cultivate it. The exportation of cattle had largely increased. In the period 1860-65, the exports exceeded the imports on the average by 2 mil. lire; while, during 1875-79, this average excess was 48 mil. lire. The export of meat and poultry rose from 4,481 quintals yearly in 1860-65 to 56,524 quintals in 1875-79; and that of eggs from 19,814 quintals to 281,857. The average export of hemp in 1860-65 was 135,000 quintals; in 1875-79, it rose to 346,000 quintals. The export of garden products rose from a bare 14,000 quintals per year during 1860-64 to 99,351 quintals during 1875-79; and, in the first nine months of 1880, it reached 143,911 quintals. In South Italy, not only the quantity rose, but also the quality, of the two great products, oil and wine. The average export of oil from 1860-64 did not reach 341,000 quintals; from 1875-79, the export reached 748,000 quintals. From 1860-65, the importation of wine about equalled the export, the imports averaging 250,000 hectolitres, and the exports 293,000. In 1879, the import did not reach 30,000 hectolitres, and the export amounted to 1,063,000. The export of fruit from 1860-64 averaged 370,000 quintals, and from 1875-79 it reached 974,000 quintals. Fruit culture occupied four or five times as much ground as twenty years before, and such land had risen enor-

* *Measures Proposed*, pp. 44-47; Sachs, *L'Italia*, pp. 332-333.

† Sachs, *L'Italia*, p. 331. Population in 1861, 21.3 mil.; in 1879, 23.4 mil.

mously in value. Around Sorrento, the price was about 24,000 lire per hectare.

This progress receives a striking verification in many ways. For instance, the savings of the country *quadrupled* in fifteen years. Such a rise, marvellous in itself, is still more marvellous when we reflect how busy during a part of this period industrial life had been, and how great the demand for investment, and the amount put into fixed capital. The savings* were, in millions of lire:—

Year.	Amount.	Year.	Amount.	Year.	Amount.	Year.	Amount.
1866	234.9	1886	299.5	1873	476.9	1877	709.1
1868	234.7	1870	353.6	1874	523.9	1878	767.9
1867	237.7	1871	407.7	1875	589.6	1879	839.8
1868	270.6	1872	485.4	1876	629.5	June, 1880	861.3

Again, the loans of the banks † increased with great rapidity. For three of the six banks of emission they were, in millions of lire:—

Year.	Amount.	Year.	Amount.	Year.	Amount.
Dec., 1866	212.1	1871	333.2	1876	392.9
1867	229.5	1872	453.7	1877	388.3
1868	232.6	1873	483.2	1878	361.5
1869	308.7	1874	440.8	1879	477.1
1870	293.9	1875	388.2	Sept., 1880	491.3

If we put out of account the abnormal development of the years 1872–74, the growth becomes evident, the total amount having doubled between 1866 and 1880. In reality, the increase was even greater. For, if we now take resources of the same nature,‡ furnished not only by the six great banks, but also by the ordinary banks of discount and deposit, by the people's banks, the savings-banks, and all other institutions of credit, we find that the amount doubled in ten years.

Year.	Amount.	Year.	Amount.
1870	464.5	1876	830.4
1871	506.1	1877	821.1
1872	521.5	1878	844.7
1873	863.3	1879	960.9
1874	848.4	June, 1880	977.1
1875	815.1		

* *Misure Proposte*, p. 55. The savings in the savings-banks for an earlier period than that we treat are very interesting. They are (*Annuario Statistico Italiano*, 1878, Parte II., p. 106):—

Year.	Amount.	Year.	Amount.	Year.	Amount.
1825	2.7 mil.	1840	18.9 mil.	1855	94.4 mil.
1830	4.8 "	1845	38.6 "	1860	127.3 "
1835	9.0 "	1850	40.0 "	1865	224.9 "

† *Ibid.*, p. 52.

‡ *Ibid.*, p. 53.

But the final proof of Italy's progress is to be found in the better condition of the laboring classes. Wages generally increase in a smaller degree and after everything else; and increase in them, therefore, through a series of years is a strong evidence of vigor and prosperity. Wages increased steadily and considerably in Italy from 1865 to 1879, and this increase was real; for the price of the various articles of food and clothing entering into the laborer's consumption did not increase with equal rapidity.* Taking the year 1862 as the standard, and representing it by 100, the following figures show the progression from year to year:—

Year.	Wages upon the Public Works.	Wages in the Textile Industries.	Average of the two.	Year.	Wages upon the Public Works.	Wages in the Textile Industries.	Average of the two.
1865	107.02	107.37	107.20	1873	126.00	121.25	123.63
1866	105.30	106.34	105.82	1874	115.30	123.90	119.60
1867	110.48	111.63	111.05	1875	116.75	142.08	129.42
1868	112.78	113.41	113.09	1876	118.05	142.97	130.51
1869	112.41	114.26	113.33	1877	118.26	144.30	131.28
1870	117.15	118.06	117.60	1878	118.80	144.08	131.44
1871	121.59	120.60	121.09	1879	113.22	126.85	120.04
1872	124.06	125.57	124.82				

Especially noticeable and significant is the rise of wages of those employed in textile industries. The year 1879 was unfortunate, and wages suffered in consequence; but, taking the year 1878 for comparison, there is an absolute gain of a third. Curiously, the wages of these manufacturing hands do not show the results of the panic years 1873-74, but increase as steadily as before. This is to be accounted for on the ground that the manufacturing establishments † had been growing in a normal way. So great a need for them existed that any growth was welcome and normal.

* *Measures Proposed*, p. 52.

† *Ibid.*, pp. 22-23. The inferiority of the Italians to the workmen of other countries is striking. "Take, for instance, a cotton-spinning mill, working 20,000 spindles. An English factory of this size requires the services of 150 men, an Italian factory 300 men; the English factory will turn out 30 kilograms per spindle, and the Italian 25 kilograms; the cost of plant will be in England 300,000 lire, in Italy 1,200,000 lire; the general expenses of the former will amount to 20,000 lire, in the latter to 144,000 lire." The total sums paid in wages will be about equal in each.

b. THE RESUMPTION.

Enough has been said, it is hoped, to show clearly how different was the Italy of 1880 from that of 1866 and the years preceding. Much more might be said which for lack of space must be left unsaid. Still, the progress is evident. Was Italy, however, ready for the transformation of the currency? It was obvious that, even if a specie basis were obtained for a time, a steady drain of coin would necessitate a return to paper money. Would such a drain occur? If gold or silver were brought into the country, would they remain there, or would they go back again across the borders?

Beyond doubt, Italy was advancing economically. Perhaps the tax-yields show best the state of the national wealth, and these* were 989 mil. in 1879 as against 474 mil. in 1866. The deposits in the savings-banks had increased from 225 mil. in 1865 to 679 mil. in 1880. The deposits and running accounts,† with or without interest, held in banks of emission, people's banks, and institutions of credit, were rapidly rising; and, besides this, a large amount of money had been invested in improvements of all sorts, and become fixed capital. In the matter of the budgets, the State, as we have seen, was on a sound basis. After 1875, the government receipts had exceeded the expenditures. Instead of any necessity for further borrowing, an opportunity was therefore offered to lighten the load of debt that had been growing so many years.

One doubt remained. Ever since 1865, according to the customs-reports, Italy had bought more than she had sold. If this state of things continued, it was urged, the gold could not remain in Italy. The objection was quickly answered. It was plain, in the first place, leaving aside the fact that the foreign commerce of a country does not represent the sum total of its dealings with other countries, that the customs-reports were inaccurate. The customs-valuation was a mere approximation, since the declarations of those interested in the

* *Annuario*, 1884, pp. 1054, 1055.

† *Mesures Proposées*, p. 57: —

1875	578.3 mil.	1875	739.3 mil.
1876	628.9	1879	791.3
1877	654.4	1880 (June)	877.3

trade had to be made the ground of computation. Again, the valuation was based on laws changed only at considerable intervals. But evidently a producer, by increased skill or by producing greater quantities, can largely reduce the price of an article without lowering the profits, so that it was entirely possible that the customs-valuation should be much greater than the real value. This reasoning explained away in part the problem offered by the foreign trade. The final and decisive argument was that based on the growth of the exports and imports themselves. Beginning with 965 mil. in 1865, as we have seen, the imports touched a maximum of 1327 mil. in 1876, and then fell steadily away. Even in 1879, a particularly bad year for Italy and one in which the importation was very considerable, the imports fell to 1262 mil., or 65 mil. less than in 1876. The exports, on the contrary, beginning with 558 mil. in 1865, rose to 1216 mil. in 1876, and then fell to 1100 mil. in 1879. That is to say, while the exports nearly doubled in value in these fifteen years, the imports increased only about 30 per cent. Considering, therefore, the immense growth of the exports and the comparatively small balance of trade against Italy, together with the undoubted lack of accuracy in the customs-reports, there seemed little reason for arguing from the customs-returns that Italy would not hold her own in keeping the gold.

In a word, then, the country had shown its ability to preserve an equilibrium in the budgets; the foreign trade was satisfactory, and growing more and more to the advantage of Italy; and industry and commerce were thriving. There seemed, therefore, no valid reason why Italy should not make an effort to do away with the forced currency. The main question was how to get the gold and silver.

Before proceeding to answer this, however, let us first consider how much specie Italy at this time possessed. The Minister of Finance, Magliani, estimated the complete total* of specie held in the country on September 30, 1880, to be, in millions of lire:—

	<i>Gold.</i>	<i>Silver.</i>	<i>Alloyed silver.</i>	<i>Bronze.</i>	<i>Total.</i>
In treasury and banks,	101.	44.	59.	2.	206.
In private hands,	106.	127.	5.	73.	312.
Total,	200.	171.	64.	75.	512.

* *Misure Proposite*, p. 58.

The amount in the treasury and banks* was divided as follows:—

	Gold.	Silver.	Bronze.	Total.
Treasury,	22.94	37.56	1.25	72.55
Banks,	67.48	64.37	6.69	133.68
Total,	101.40	102.43	2.94	206.87

That held by the banks† again may be further reduced to the portions held by the different institutions:—

	Gold.	Silver.	Alloyed silver.	Bronze.	Total.
National Bank of the Kingdom,	24.08	21.84	22.19	0.51	80.77
Bank of Naples,	16.11	2.11	0.51	0.01	20.04
National Bank of Tuscany,	2.46	0.26	....	0.17	3.89
Roman Bank,	6.98	2.97	....	0.20	10.39
Bank of Sicily,	9.08	2.23	0.55	....	12.11
Tuscan Bank of Credit,	5.00	....	....	....	5.00
Total,	67.48	31.01	23.25	0.89	123.61

The coin ‡ held in private hands was of two sorts. The one, about 140 mil. of old money still out in the central and southern provinces, consisting of Papal and Bourbon coins, was estimated at $\frac{1}{2}$ silver and $\frac{1}{2}$ gold. The other, calculated at about 100 mil., and used in commerce, was estimated at $\frac{1}{2}$ gold and $\frac{1}{2}$ silver. Together, these two sums may be stated approximately to be composed, as above, of 108 mil. in gold, 127 mil. in silver, and 5 mil. in alloyed silver.

A word of explanation in regard to the silver coinage is still needed. From 1862–68, Italy coined § in fractional silver (.835 fine):—

Denomination.	Value.
2 lire.	20. mil.
1 " "	51. " "
0.50 " "	68. " "
0.20 " "	7. " "

Total, 156 mil.

When the forced currency was declared, this money almost entirely left the country, and found its way into the other States of the Latin Union, where, according to the Monetary Convention of 1865, it had a legal course. A small remainder went into the coffers of the State and of the banks. When the Italian government began to think of resumption, it naturally desired the return of its silver. Accordingly, by the

* *Mesures Proposées*, p. 90.

† *Ibid.*, p. 91.

‡ *Ibid.*, pp. 28, 29.

§ *Ibid.*, pp. 91–96. *Vide also Moneta e Corso Foraneo*, by C. F. Ferraris. Milan, 1879.

convention * of November 5, 1878, modified by that † of June 20, 1879, the other States of the Latin Union entered into agreement not to accept this money as legal payment after January 1, 1880, and to refrain from accepting it until the cessation of the forced currency. The silver would be retired from circulation by them and forwarded to the French Government, from whom Italy, on her part, agreed to purchase it to the amount of 100 mil., paying therefor, either in gold or in silver 5-franc pieces. The dates at which France should send the money to Italy were arranged for: 13 mil. on January 1, 1880; 17 mil. on December 31, 1880; and the remainder in three equal instalments payable at the end of 1881, 1882, and 1883. These latter payments, however, could be anticipated at a discount. By the same convention, Italy, owing to the increase of her population, was permitted to raise the total amount of this coinage from the 156 mil., as agreed in the convention of 1865, to 170 mil. The amount in circulation in the other States proved less than was supposed, for the French government received in all but 79 mil. The condition of this silver circulation, ‡ then, on September 30, 1880, was:—

a. In the Treasury,	35.81 mil.
b. In banks:	
1. Temporary State deposits,	36.91
2. Property of banks,	10.70 37.61
c. Sum due from France, December 31, 1880,	16.94
d. Sum due from France in next three years,	49.00
Total,	123.66
e. Adding the increased issue authorized as above,	14.00
Total,	142.66

Turning now to the paper money, the total amount of the paper circulation on the 30th of September, 1880, was 1,664.9 mil., of which 940 mil. was in *Consortio* notes. The remainder, 724.9 mil., had been issued by the banks, and was divided § as follows:—

National Bank of Kingdom,	446.83 mil.
Bank of Naples,	142.75
National Bank of Tuscany,	45.85
Roman Bank,	45.85
Bank of Sicily,	39.65
Tuscan Credit Bank,	13.80
Total,	734.93

* *Bullettino Ufficiale*, 1880, pp. 302-303.

† *Ibid.*, pp. 302-303.

‡ *Mesures Proposées*, p. 94.

§ *Ibid.*, p. 86.

The amount of paper divided according to denomination *
was : —

Denomination.	Consorzio Notes.	Bank Notes.	Total.
Cent. 50	11.1 mil.	0.5 mil.	11.6 mil.
Lire 1	39.0	0.3	39.3
2	68.7	0.65	69.35
5	261.9	0.3	262.2
10	243.5	0.1	243.6†
20	59.3	0.5	59.8
25		0.5	0.5†
45		0.1	0.1
50		123.7	123.7
100	69.0	195.1	264.1
200		37.9	37.9
250	26.4	0.1	26.5
500		241.1	241.1
1,000	124.1	129.6	253.7
Total,	940.0	724.9	1,664.9

In fine, the entire circulation, both specie and paper, consisted of specie, 519 mil., and paper, 1,665 mil., making a total of 2,200 mil. lire.

On the 15th of November, 1880, the minister, Magliani, presented to the Chamber, together with his searching report on the condition of Italy, a bill † for the removal of the forced currency. The bill was founded on the idea of preserving the actual condition of the Italian market by making no change in the amount of currency in use. First of all, the *Consorzio* was to be abolished, and the notes of the *Consorzio* assumed as a direct debt of the State. Magliani then proposed, in brief, to contract a loan of 644 mil., of which 400 mil. should be in gold and 244 mil. in silver. This sum, he estimated, could be realized, without disturbance, in 5 per cents. at about 86 plus 1 per cent. for commission, transportation, and expense of negotiation. Of this 644 mil., 44 mil. in gold were to be at once paid to the National Bank, to extinguish an interest-bearing loan made by it to the treasury. The 600 mil. remaining would then be equivalent to two-thirds of the government paper in circulation, and would gradually replace 600 mil. of this. By this plan, the metallic circulation was raised to about 1,200 mil. and the paper reduced to about 1,000 mil. Provision was further made for putting the circulation of the banks on a sounder basis. The National Bank, on September 30, 1880, had in circulation 449

* *Measures Proposed*, p. 38.

† *Ibid.*, pp. 143-150.

mil. in paper. By the receipt of 44 mil. in gold from the State, and by drawing on the reserves at its disposal for 22 mil. more, the minister calculated that its paper circulation could be reduced from 449 mil. to 388 mil., reducing the total amount of notes issued by all six banks of emission to 660 mil. The legal circulation of the notes of these six banks, which, having been prolonged from year to year, was to cease on December 31, 1881, would be extended to the 31st of December, 1883, at which time, it was hoped, the resumption would be begun, and would then cease. The method of redemption would be as follows: The smaller legal tender notes,—those of 50c., 1, 2, and 5 lire,—which had been put out to the amount of 315 mil., were first to be retired; then notes of the denominations 100, 250, and 1,000 lire would be withdrawn. Since, however, the sum of these latter notes in circulation amounted to 380 mil., there would not be enough specie to retire them all. Consequently, after the loan was exhausted, 46 mil. of them would remain outstanding; but, as it was probable that some of the small notes would not be sent in for redemption, a part of the specie set apart for redeeming them would therefore be available for the redemption of the larger notes. The total amount of State notes in circulation after the proposed operation was concluded would be: in 10 lire notes, 248.5 mil.; in 20 lire notes, 50.5 mil.; in 100, 250, and 1,000 lire notes, 46 mil.,—in all, 340 mil. lire.

At 5 per cent., the loan would necessitate an annual interest payment of about 84 mil. Evidently, if the government could be sure of a surplus of 42 mil., as in 1879, the loan could be undertaken without difficulty. But, unfortunately, no such surplus could be relied on. In 1878, for instance, the surplus had been only 14 mil. The sum, however, was easily procurable. Magliani proposed to raise it in part by the abolition of the *corso forzoso* itself. The Italian Government, as we have seen, suffered like any citizen from the weight of a gold premium, since it had itself to make payments in gold. The abolition of the forced currency and the resumption of specie payments would, of course, do away with this expense. To this saving — at least 12 mil. — could be added 8½ mil. which

had been paid the *Consorzio* for the fabrication and renewal of the paper money. Here, then, was 15 mil. The minister now proposed a regulation of the pensions, by which certain considerable life annuities for civil and military service were to be transferred into consolidated debt; and from this an immediate saving of 19 mil. was expected. The State, it is true, would lose by this the advantage of a gradual diminution of the charge by the extinction of lives, but it would make a present annual saving; and this was the point desired. In this way, the necessary 84 mil. was secured. Granting that these estimates were too large, and that they ought to be cut down to a much smaller figure, it must be remembered that the surplus of the budget has not been reckoned in, which would more than make good any deficiency.

After the bill had gone through the hands of a committee, its provisions were warmly discussed* in the Chamber. It was contended that, while the financial and economic conditions of the country and the prospects of a general peace might seem to render desirable the abolition of the forced currency, yet the former had been disproved, and the latter was a hope rather than a belief. Further, the transformation of the pension money into consolidated debt served merely to postpone a payment; and, since interest on this sum must be paid, the country gained nothing. Then it was feared that a further issue of *rente* might depreciate that already issued, and that a moment of panic, as in 1866, might serve to bring the *rente* all back again into Italy. Finally, it was urged that, instead of redeeming only two-thirds of its notes in circulation, the Government ought to make the operation a complete one. These and other objections were brought up against the bill; but, though urged with vigor, they had little effect. The bill, as modified by the committee, finally passed the Chamber by the overwhelming vote of 266 to 27, and, receiving no modification in the Senate, was promulgated on April 7, 1881.

The bill, as it became a law,† differed somewhat in detail

* *Atti Parlamentari*, first session, 1881. A good though brief summary of the debates is given in *Part. Doc.*, xcix., 1881, Sir A. Paget's correspondence; also, in Sachs, *L'Italia*, pp. 681-644. *Vide Provedimenti per l'Abolizione del Corso Forzoso: Discorsi del Ministro della Finanza*, pronunciati alla Camera dei Deputati, 14 e 15 Febbraio, 1881, Roma, 1881.

† *Bullettino Ufficiale*, 1883, pp. 25-33.

from its original draft. Upon the dissolution of the *Consorzio*, all *Consorzio* notes of a denomination under 5 lire and over 10 lire, and 105.4 mil. in 5 lire notes, were to be redeemed in coin and destroyed. The 10 lire notes and the remainder of the 5 lire notes, within five years from the date of the withdrawal of the other notes, were themselves to be withdrawn and destroyed, and their place taken by State notes in regular form, convertible into gold. For the present, their value was to be secured by a deposit of *rente*; but the annual surplus of the treasury, available for the extinction of its debts, was to be devoted to the diminution of the State debt represented by them. The Government was directed, as before, to pay 44 mil. in gold to the National Bank at least three months before resumption began. The legal circulation of the notes of the banks of emission was prolonged to December 31, 1888, although, even after this date, the Government was authorized to receive them. During the period of their legal circulation, however, the Government retained the power to regulate the rate of exchange between the six banks of emission and between the banks and the treasury; but the regulation forbidding a change in the rate of discount without the permission of the Government was to cease the day resumption began. It was further decreed that the reserves of the banks of emission should be composed entirely of metallic money having a legal course in the kingdom, and that these reserves could not be alienated or converted into silver, and that the notes of the banks must be payable either in coin or in State notes. Finally, the Government was authorized, by redeeming the small paper notes, to put into circulation the subsidiary silver money, and such other decimal money in gold or silver as it might possess.

The operation of the loan was immediately begun. The contract * was signed for the Government by the Minister of Finance and for the contracting parties by the National Bank, in its own name and in that of Baring Brothers & Co. and C. J. Hambro & Sons, of London, of the Discount Bank of Paris, and of the Italian *Credito Mobiliare*, representing a syndicate of Italian banks. The nominal capital † on which the loan

* *Protesta di 644 Milioni*: Relazione presentata dal Ministro delle Finanze interiori del Tesoro, O. Magliani, nella tornata dell' 8 Aprile, 1888, p. 5.

† *Ibid.*, p. 6.

was based, in 5 per cents., at a fixed price of 88.25, was 729,745,000 lire, which, if the loan proved successful, would yield the 644 mil. desired. The contract* provided for 444 mil. in gold and 200 mil. in silver, and the time within which these sums should be paid to the treasury was fixed at not later than September 30, 1882. The *rente* for the loan was to be delivered in Paris with interest from January 1, 1882, at the rate of a little less than 5 per cent. (4.988), at 87.17. The fixed price, as has been said, was 88.25 at 5 per cent.; but the Italian tax on *rente* reduced this to the stated figures.† Owing to the difficult state of the markets,‡ — the Tunisian and Egyptian crises, the Paris crisis, and the American demand for gold,—the original contract for the loan was modified, and the time extended to February 15, 1883. In return for this concession, the banks agreed to furnish 47 mil. more in gold than had been stipulated, thus raising the total amount of gold to 491 mil.

On January 31, 1883, the accounts between the contracting parties were closed. The loan had proved successful, and the 644 mil. had been paid. Of this amount, 44 mil. had been paid to the National Bank as provided, by a mere transfer of accounts; and the 600 mil. remaining had been either remitted to the treasury in metal, or comprised in payments made against Italian liabilities abroad on the half-yearly payments on the public debt, or on the payments (14 mil.) due on the share of Italy in the St. Gothard tunnel. The operation had been conducted with great secrecy,§ in order not to alarm

* *Prestito di 644 Milioni*, p. 6.

† "The price at which it should be issued was fixed by agreement at 88.25 for 5 lire of *rente*, from which had to be deducted interest accruing in the quarter between January 1, 1882, when interest began to run, and March 31, the mean date of payment by subscribers. This, after the tax on personal property, netted 1.06 lire for every five of *rente*, reducing the real price of issue to 87.17, which is within the limit prescribed by the law, since it corresponds to an annual interest slightly under 5 per cent. (4.988)." *Relazione della Commissione Permanente, sui Provvedimenti per l'Abolizione del Corso Foraneo*, June 17, 1882, p. 43.

‡ *Prestito di 644 Milioni*, p. 7.

§ *Economist*, December 10, 1881. "Sometimes the influence of the operation appears in the fact that gold on the way from Australia to an English port is intercepted on its passage. Sometimes a report comes that a supply has been drawn from an out-of-the-way foreign bank, where the existence even of any stock on a comparatively large scale had scarcely been imagined. . . . The present operation is one in which the natural current is turned and made to run in a direction opposed to that which it would usually follow."

the markets, and, as a matter of fact, was scarcely felt. An analysis of the sums in coin delivered to the treasury shows that nearly every civilized country was laid under contribution for gold.*

France	supplied	66.7 mil.	Russia	supplied	25.3 mil.
America		65.8	Australia		10.
Germany		65.5	Denmark		5.5
England		59.3	Switzerland		.3
Italy		58.4	Belgium		2.3
Austria		38.5	Spain		.6
			Total,		397.9

The silver taken, as was natural, was less evenly divided. France furnished 80.5 mil.; Switzerland, 4.5 mil.; Belgium, 0.7 mil.; and Italy some 29,000 lire,—in all, 85.8 mil. in silver. In addition to the coin, 116 mil. on credit,† as we have said, was also furnished. This credit was reckoned as $\frac{1}{3}$ gold, or 45.8 mil., and $\frac{2}{3}$ silver, or 70.2 mil.‡ Beginning with July, 1881, the payments were made as follows:—

	Gold.	Silver.
To December 31, 1881,	139.5 mil.	16 mil.
" December 31, 1882,	298.	68.8
" March 1, 1883,	8.9	3.
	<hr/> 346.3	<hr/> 87.8
Silver,	85.8	
Credits,	116.	
	<hr/> 608.	

Comparing the credit conditions§ at the beginning and end of the operation, we find an appreciable variation in the price of *rente*, while exchange becomes somewhat easier.

	Feb. 3 to Apr. 7, 1881.			Feb. 15 to Mar. 3, 1882.			Mar. 31, 1882.		
	Average,			Average,					
	Paris	London	Berlin	Paris	London	Berlin	Paris	London	Berlin
5 per cents.	90.75	93.37	90.	89.40	93.37	90.70	90.75	93.37	90.90
Exchange on Italy,	161.30	25.65	125.35	160.21	25.28	123.62			

Nothing, meanwhile, had happened to bring any new or unfavorable element into the situation. The budgets,|| notwith-

* *Presitta di 644 Milioni*, p. 22.

† *Ibid.* p. 12.

‡ *Ibid.*, pp. 25, 26.

§ *Ibid.*, pp. 21, 22.

|| *Annuario*, 1884, pp. 1054-1068.

at the time of resumption 6.8 mil. had been withdrawn. Further, in accordance with an agreement made in 1872, by which the banks of emission had facilitated certain operations of the Government, the treasury now redeemed in gold 50 mil. of the ex-*Consorzio* notes held by the banks. These two steps reduced the amount of State paper money to 888.2 mil. As it was intended to leave in circulation 840 mil. of this amount, the total sum to be withdrawn was 548.2 mil.

The operation began quietly. The time was a fortunate one, in that trade was commonly in April at a slack-water point. But, better than this, the foreign exchanges* became strongly favorable to Italy, and brought an appreciable amount of specie into the country. From the 12th of April to the 30th of June, 1888, the importation of coin reached 10.5 mil., of which 6.2 mil. was in gold. No great pressure† for specie was shown. From the 12th of April to the 30th of June, 1888, only 1.5 mil. per day were exchanged against gold and silver. At no time did the operation stand in the slightest danger of panic.

The amount of ex-*Consorzio* notes remaining in circulation at several dates, and consequently the movement of withdrawal, is shown in the following table,‡ in millions of lire:—

	Dec. 31, 1881.	April 12, 1882.	July 1, 1882.	July 1, 1884.	July 1, 1885.	July 1, 1886.	Amount with- drawn.
50 c.	11.11	4.38	4.04	2.18	1.60	1.58	9.58
1 L.	39.86	40.10	36.28	12.66	5.56	4.05	35.81
2	65.53	68.12	60.50	19.96	7.89	4.81	90.73
5	201.47	201.36	162.14	82.96	42.43	25.87	175.90
10	242.36	241.86	241.73	124.51	65.53	35.94	206.41
20	50.26	48.26	43.87	26.37	13.37	10.86	39.33
100	60.00	58.07	53.32	28.80	25.40	17.80	42.11
250	57.23	74.91	67.23	44.63	23.73	18.37	66.46
1,000	181.56	148.06	120.16	31.67	44.04	30.64	141.94
	<u>940.00</u>	<u>863.21</u>	<u>819.23</u>	<u>437.15</u>	<u>225.04</u>	<u>159.74</u>	<u>781.26</u>

To replace 5 and 10 lire notes, as provided by the law of

* Cucheval-Clarigny, *Les Finances de l'Italie*, p. 157.

† Sachs, *L'Italie*, p. 642.

‡ *Annuario*, 1882, pp. 1123, 1129; 1885, pp. 299, 301. *Relazione della Commissione Permanente*, 1882, p. 111; 1884, pp. 19, 27; 1885, p. 28; 1886, p. 24.

1881, State notes were issued, and were in circulation* as follows:—

	July 1, 1884.	July 1, 1885.	July 1, 1886.
5 l.	84.14	88.00	180.00
10 l.	<u>134.68</u>	<u>130.35</u>	<u>285.00</u>
	218.16	208.35	305.00

The summary of operations down to July 1, 1886, stands, then, as follows:—

	Redeemed in Cash.	Replaced by State notes.	Withdrawn.
Before April 12, 1883,	58.79		58.79
April 12 to July 1, 1883,	68.39		68.39
Year ending July 1, 1884,	163.91	218.16	382.07
Year ending July 1, 1885,	130.35	71.79	302.11
Year ending July 1, 1886,	<u>61.16</u>	<u>15.14</u>	<u>76.30</u>
Totals,	476.17	305.00	781.36

The total paper circulation, both State and ex-*Consorzio*, remaining as a charge upon the treasury stood, at the several dates, as follows:—

December 31, 1881,	940.00	July 1, 1884,	655.31
April 12, 1883,	863.31	July 1, 1885,	524.99
July 1, 1886,	619.23	July 1, 1886,	443.83

At the date last named, the balance remaining from the loan of 600 mil. lire, after deducting 476.17 mil. for redemptions and 2.78 mil. for redemptions in progress,† was 121.10 + mil., which, with 170.02 mil. cash in the treasury, made the total stock of metal actually in hand after three years of specie redemption 291.18 mil. lire.

* *Relazioni*, 1884, p. 25; 1885, p. 29; 1886, p. 25.

† *Relazioni*, iv. 31; v. 22-31.

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THE ENGLISH TRADES-UNIONS.

It is very hard in England, at the present moment, to know and speak the truth about anything. The heat and consequent stratification of public opinion in regard to all questions which in any way trench upon conflicting social and political prejudices is so great, that facts which come to the inquirer through this medium are affected very much as objects are by the mirage stratification of hot air, — turned upside down. The inherent difficulties in the way of the present inquiry as to the condition and prospects of trades-unions seem doubled; for, aside from the stratification of public opinion without, there is a stratification of fact within, which makes even statistical generalizations very unsatisfactory. The 252 unions which appear upon the books of the Registrar of Trade and Friendly Societies are by no means alike in details of constitution, method, and purpose. Moreover, the social stratification, which is conspicuous in the upper portion of English

society, has its counterpart in the configuration of that vague division of the population called the "working classes." There is no great solidarity of feeling among workmen as a whole: the lines of demarcation between skilled and unskilled are drawn as sharply as the innovations of machinery permit them to be, and trades of equal skill are kept apart by petty traditional jealousies; so that the progress of a part does not always mean the progress of the whole.

The functions of the modern trades-union are often described as threefold,—aggressive, defensive, and benevolent. The first two have primarily to do with all the questions of wages, strikes, lock-outs, and all the belligerent activities which attract attention and gain notoriety for the militant side of efforts to secure rights and defend those already obtained. The provident work, on the other hand, is seldom appreciated, and often quite ignored, inasmuch that no longer ago than July, 1888, we find the Labor Correspondent for the Board of Trade congratulating himself, in the second report upon trades-unions, that the publication of such figures will not only serve to enlighten economists and the unions themselves, but "will also tend greatly to correct the generally prevailing notion that the sole object of trades-unions is to foster and encourage strikes, and that most of their funds are applied for that purpose." Fortunately, it is not necessary to enter upon any detailed study of the constitution and mechanism of English unions. It is quite enough to indicate the characteristics which determine their work.

The conspicuous features of the organization as a whole are: (1) a large number of purely independent local unions, managing their own affairs; (2) the centralized or amalgamated societies, embracing local branches in the same or similar trades; (3) the trade councils, forming a centre of communication for the various societies of a given locality; (4) the annual Congress of the whole body, with

its permanent representative, the Parliamentary Committee. Thus it is evident that, while centralization is by no means entirely wanting, there is nothing of the compactness and uniformity which were aimed at in a great centralized organization like the Knights of Labor in the United States. Moreover, there is still another important peculiarity; for the English unions, like some of the older unions in the United States, are essentially *trade* unions, founded for the most part upon identity of pursuit, and a capacity to earn the normal wages of the trade,—a capacity which nowadays is usually taken as an indication of at least a minimum of technical training, corresponding roughly to the old requirements of apprenticeship. In some of the stronger and more conservative organizations, the old terms of apprenticeship, extending in a few cases to seven years, are in theory still insisted upon as qualifications for membership, though even here the rougher criterion of wage-earning skill is usually accepted as sufficient evidence of eligibility on the part of any proselyte who can be persuaded to join.

It is difficult to explain in a single word the relations of mutual independence and loose association in which these organizations stand. First of all, there are the numerous purely local unions, embracing as many artisans in their respective localities and industries as can be persuaded to join an organization and pay regular assessments for mutual protection in wages and hours of labor, for out-of-work benefits, sick pay, burial funds, and the like; and the only connection which these societies have with the collective body of unionists arises from the fact that they send delegates with greater or less regularity to the annual congress, contribute somewhat grudgingly to the support of the Parliamentary Committee, and appear, perhaps, on the books of the Registrar of Trade and Friendly Societies. In other respects, they preserve their exclusive autonomy, with the usual board of officers and the familiar commit-

similar subjects, are binding upon members within the district, and members involved in any strike or lock-out resulting from such an approved decision receive the full support of the society, according to the provisions of the general rules. Since registration of unions under the provisions of the Trade Union Act* has become more general, there has been the greatest publicity as to these rules; and, though they vary in important details, the method indicated represents fairly enough the procedure of the unions in purely offensive and defensive action, neglecting for the moment their work as friendly and benefit societies. The strike pay, which is quite distinct from the out-of-work donation, varies in the more important societies from 10 to 12 shillings per week, rising considerably above these amounts in some instances, and frequently including an additional scale of allowance for the wife and children. Added to these regular doles, there are frequent supplementary gratuities supplied from time to time by special levies.

All this, it is needless to say, concerns but one function of the trades-unions, and a function that has diminished, rather than increased, of late years. Indeed, it is the constant taunt of the extreme socialistic minority within the unions and without that the expenditure for strikes, lock-outs, and other forms of trade disputes represents but an insignificant portion of the total expenditure and activity. On the other hand, the unions are constantly congratulating themselves upon this very fact; and they very properly use this taunt with which the extreme radicals attack them from below, to repel the assaults of those who attack them from above with the charge of acting "in restraint of trade" and keeping up an artificial standard of wages, which is a perpetual menace both to the profits of the employer and the commercial supremacy of

* See the Trade Union Act, 34 & 35 Vic. (1871) c. 31; amended by the Trade Union Act Amendment Act, 39 & 40 Vic. (1876) c. 22.

provisions in the Amalgamated Society of Engineers. According to their rules : —

Should any free member (that is one who has been 12 months in the society) be thrown out of employment under circumstances satisfactory to his branch and not disentitled to benefit through arrears, or non-free member be withdrawn from his situation by a branch district committee or executive council, and continue out and sign the vacant book for three consecutive days, he shall be entitled to the sum of ten shillings per week for 14 weeks, seven shillings for 30 weeks, and a further sum of six shillings for 60 weeks, when the benefit shall terminate; and in no case shall a member receive *more than 104 weeks' donation* benefit in succession, except members of ten years' standing or members who have been withdrawn from their situations by the executive council or local district committee or by their branch, making a total of £19 10s. in any period of 52 weeks.

With the Carpenters, the total of their benefit may not exceed £9 12s. With the Iron Founders, a membership of two years gives a right to, "for the first 13 weeks, nine shillings per week; for the second 13 weeks, eight shillings per week; for the next 26 weeks, six shillings per week. After donation has ceased, one shilling per week, if not working at any other occupation. One shilling per week shall be deducted from the benefit, whatever the scale may be, and retained by the treasurer until the following club night, when it shall be paid in as contribution." Other rates are: Boiler-makers and Iron Ship-builders, seven shillings for 14 weeks, and three for 9 weeks in any one year; Steam-engine Makers, ten shillings for 12 weeks, and an additional five shillings for 14 weeks in any one year.

The rate of contribution among societies paying the full list of trade and sick benefits may be stated roughly at a shilling a week; but, in times of depression, when expenditure is great and reserve funds are reduced, the assessments are increased for long periods, and frequently supplemented by special levies. The yearly balance in hand in a society like the Iron Founders, for example, fluctuates between £65,895, or a little more than £5 per head, in

the general executive. Once a year, the funds of the whole society are equalized; and lodges which before this time exhaust their funds by out-of-work pay, disputes, or other legitimate expenditure, draw upon more prosperous branches. So that the whole funds of the general society banked in this way among the branches may be concentrated at any point. Farther than this, there is a vast amount of clerical work, involving paid secretaries, extensive central offices, and a good deal of skilled accountant work. Monthly reports are due from branches to the executive; and from the information thus furnished in regard to members sick, out of work, or otherwise affected by the state of trade, the general secretary compiles for distribution among the branches quarterly, annual, and sometimes even monthly * reports. The whole society is thus made a bureau of information,—an intelligence office in regard to fluctuations of trade, possibilities of obtaining employment for those who are burdening the donation benefits, and all affairs of local or general importance.

It must not be forgotten, however, that this complicated mechanism is kept in working order by only the best societies,—those which serve to show what a labor organization can do. Moreover, in certain large societies, like the Amalgamated Tailors, trade and sick benefits are separate; and the member has the option of paying 4½*d.* per week for dispute pay and travelling relief, or 7½*d.* for the full complement of benefits. But comparatively few of the 14,000 tailors avail themselves of the option. In other cases, a large amount of work is done with a comparatively small fixed contribution, eked out from time to time by special levies. Thus the Northumberland Miners' Mutual Confident Association calls for only 6*d.* per fortnight; and yet, with a membership which rose from 4,325 in 1866 to 19,371 in 1874, and has since gradually fallen

* The Friendly Society of Iron Founders, for example.

tion, land nationalization, and all the mooted questions are discussed with a freedom which strongly reflects the color of local opinion and brings out the antagonistic views of different trades. By a curious provision for a sort of duplicate secondary representation, each council is represented at the Congress by a special delegate, whose constituency is designated in the official report by the total membership of the unions which the council represents, the unions themselves at the same time sending delegates of their own,—a provision which sufficiently accounts for the guileless frequency with which newspapers credit the congresses with representing two hundred thousand or so more unionists than are known to exist.

The constitution of the annual Congress presents no difficulties. It is simply a still more extensive manifestation of the gregarious instinct that takes the place of definite centralization of the English trades. The first attempt at such a meeting was made in 1868, just as the unions were beginning to feel the good effects of the searching criticism and concentrated attention which parliamentary investigation had secured for them. It was not until three years later that the Congress became important enough to elect a permanent Parliamentary Committee to represent its views in regard to legislation. Since then, however, the importance of this committee has gradually increased. It is actively represented in Parliament; it is consulted by the government in reference to proposed labor legislation; and, at the annual Congress, the presentation of its report, the discussion of the legislative programme for the ensuing year, and the election of the new committee—composed according to present regulations of ten men and the secretary of the Congress—are the central features of the deliberations. From the very first there have been more or less successful attempts to exploit the congresses for noble and ignoble purposes,—sometimes by means of papers and speeches by public-spirited men designed to instruct the

unions in the way they should go, sometimes by alleged subsidizing of delegates in the interest of "fair trade," and sometimes by attempts to give the congresses a special political complexion. From time to time, this has led to the expulsion of objectionable delegates; and, in 1872, a somewhat ironical resolution declared that papers in defence of the principles of trades-unionism would no longer be in order. In like manner, it is now provided that the expenses of delegates shall in no case be defrayed by persons outside the unions represented. Doubtless, it is difficult at times to draw the line between the philosophical essayist, the propagandist, and the political partisan; and it occasionally happens to this day that men of social distinction and political eminence entertain their trades-union friends with harmless declamations about abolition of privileges and the like.

Even the degree of centralization attained through the Congress and Parliamentary Committee has always been a source of apprehension to all those who have seen a great menace to existing social and political institutions in any tendency to a compact organization of workingmen; and, on the other hand, the attainment of some more compact federation has always been the ideal of those who have felt the chief weakness of the unions to lie in their isolation. Twenty years ago, people who avowed their sympathy with the growing organizations found it necessary to allay popular apprehension with assurances that a close federation of English trades was an impossibility, in view of the jealousies and conflicting interests involved. Even so sanguine a champion and historian of the labor movement as Mr. Howell, writing a dozen years ago, reassures the "timid and superstitious" capitalist with an enumeration of difficulties which still hold good.* In conclusion, he says:—

English capitalists may therefore feel secure, in so far as they are threatened with ruin from this cause, that the idea is but a phantom

* *Conflicts of Capital and Labor*, p. 418.

and a dream, terrible in its realism to a timid and superstitious people, but dismissed with a smile by those who know anything of the habits and modes of thought of the working classes of this country; and especially of unionists, who are neither dreamers nor socialists, but slow, practical, hard-headed Anglo-Saxons, to whom an extra penny an hour is of more value than the finest theory ever propounded by a patriot or a philosopher.

As a matter of fact, not a few attempts at a grand federation have actually been made since the National Labor Association of Organized Trades began its inglorious career in 1846, and from time to time the subject of a federation has come before the congresses; but nothing has ever been accomplished beyond a temporary alliance of closely related trades.

If now we turn again to the actual work accomplished by trades-unions, we find the statistical summaries of trade and friendly benefits very imposing, as the table prepared by Mr. Burnett for the recent International Trade Unions Congress in London will suffice to show, without further explanation.* It will be seen, as the totals now stand, that something less than 10 per cent. of the total expenditure has gone for "trade dispute" purposes,—£708,488 out of £8,276,785. Technically, this statement is correct; but it practically considerably understates the amount actually paid on account of disputes, inasmuch as societies paying out-of-work donation make no distinction in their published returns between out of work caused by strikes and that arising from ordinary causes. Obviously, therefore, there are times in which the disputes ought in fairness to be charged with the expenditure for both strike and donation benefits. Owing to the great variety of benefit provisions already mentioned, it is quite impossible to correct accurately this discrepancy; but I am assured on the most competent authority that a full 10 per cent. of the total given would about cover the total expenses of disputes.

* See Table A, Appendix.

tiate their charges of apostasy to the cause of labor by the very statistics to which the unions point with pride. Millions expended for out of work, sickness, and superannuation are contrasted with the ridiculously small amounts devoted to strikes, and the unions are taunted with being "mere benefit societies."

Undoubtedly, we have here a fundamental difference in the conception which the two parties have of the problem of life and the methods of solving it. The open taunt of the socialistic minority, inside and outside the unions, that the expenditure for fighting purposes is insignificant, shows conclusively that, so far as the trades-unions are concerned at least, the labor question in England has already ceased to be a matter of fights and strikes. A careful examination of the statistics will prove conclusively the same thing.

I have already pointed out the intimate correspondence between the general condition of trade and the rise and fall of out-of-work benefit. A close scrutiny will show that, where allowances are made for special expenditure occasioned by trade disputes, the percentages of unemployed follow almost exactly the well-known periodic fluctuations of trade, seeming irregularities, as in the case of the Carpenters and Joiners, being due in all cases to exceptional conditions determining the prosperity of the trade.* Not only this: the influence of bad trade is seen in the fluctuations in membership or in the rate of increase of growing societies. During the season of depression from 1865 to 1870, the membership of the Engineers increased only 3,727; in the five years of phenomenally good trade which followed, the increase was more than 9,000; again, in the disastrous reaction which came in 1875-80, the increase was only 660; once more, the increase of 7,597 corresponds to the improved trade from 1880 to 1885; and, finally, the sudden advance in the present year shows how quickly the membership

* See Table B, Appendix.

of something else. The socialist has a keen eye for symptoms of weakness, and the evidences of disintegration which he detects in trades-unions are also common to most institutions which stand between him and his pre-Utopian chaos. The apprehensions of the more conservative unionists on this point may be gathered from the following extract from the *Steam-engine Makers' Report* for 1887:—

The outcome of these improvements [in machinery] is becoming more heavily felt as years roll on, and the number of unemployed becomes immeasurably greater. The result is dissension amongst those who are unemployed and feel the pinch of hunger, which prompts them to advocate changes that they would ignore, were they in employment and fairly provided for. One of the theories or reforms that is suggested under such circumstances is that of socialism, and that by many who, in full work, would ignore it. The tendency to increase the followers of this opinion will extend equally with the decrease of employment. As each year finds the output greater, and the unemployed equally so, it is only natural that discontent will prevail, and remedies be suggested that are not entirely equitable, even if they are practicable, as propounded by their theorists and advocates.

Yet, after all, there is a degree of truth in all these criticisms. The unions have not kept pace with the increase of population during the last ten or fifteen years. Nay, they can scarcely be said numerically to have held their own. In many large societies, like the Amalgamated Engineers, the steady growth has simply kept abreast of the development of a great industry; while smaller societies have sometimes correspondingly dwindled and disappeared. Accurate statistical comparisons as to grand totals for the whole country are extremely difficult; for the numbers represented at the trade congresses are sometimes influenced by minor considerations, and there is no adequate provision either within the unions themselves or in the statutory regulations of the Registration Act for securing complete and systematic returns. Even the Labor Correspondent of the Board of Trade, who earned the confidence

of the unions by years of active leadership in the Amalgamated Society of Engineers, was able to secure for his first report, in 1887, adequate returns for only 18 societies, representing 196,341 members; while for his report in the following year about 70 made adequate returns, and 207 known to have received the official forms made no returns at all. The loose condition of affairs may be seen from the following statement accompanying the report for 1888:—

There were 252 trade societies then on the list, of which only 184 made the returns *required by law from* registered societies. In addition to these, the addresses of other 60 trade unions, *not* registered, were obtained. To each of these a copy of the form and circular was duly forwarded by post, 312 in all being sent out in November. By the 13th of March, 16 forms were returned from the post-office marked "not to be found," 2 societies had been dissolved, and only 24 returns were sent in, very many of them being in a most incomplete state.

The total membership represented on the Registrar's list for 1886 was 340,898; and nine-tenths of this whole number, or 307,180, belong to the small minority of unions making returns to the Board of Trade. Still, in spite of their inadequate returns, Mr. Giffen, in submitting the first report of the Labor Correspondent, suggests "a probable total membership of over 600,000 among all trades-unions throughout the country,"—an estimate which, when allowances are made for duplicate representation from trade councils and the like, corresponds pretty closely with the trade congress reports. Perhaps it is not altogether fair to contrast this picture with that which a sympathetic historian gave of the unions a dozen years ago; and yet the triumphant tone of Mr. Howell's predictions in 1877 and 1878 is rather instructive, especially in view of the disasters which overtook the unions in the memorable depression of 1879.

Reviewing the work and prospects of the unions,* he says:—

Perhaps the most notable fact of modern times, in connection with trade unions, is the rapid growth of vast organizations in the ranks of *unskilled labor*. The Agricultural Laborers' Union, which was formed in 1872, has already spread over the entire kingdom. . . . But even these figures, astonishing as they are in their grand totals, give but a faint idea of the extent, power, and importance of this great social force, and of its ramifications all over the country. . . . The total number of independent societies alone cannot be far short of 8,000. . . . The total number of workmen in all grades who are thus combined cannot be less than 1,250,000; very nearly 1,000,000 have been represented directly or indirectly at some of the annual Trade-union Congresses; the annual income must very nearly approximate to £2,000,000 sterling, and their total reserve funds are hardly less than that sum, for sixteen societies alone have a balance in hand of over £603,064. Even this, however, does not represent all the actual and available force of these industrial organizations; for the unions can count upon the support, in case of need, the contributions, of vast numbers of workmen who are not regular members of the society. For all practical purposes, therefore, the unions may be taken to represent the strength of the whole body of skilled workmen.

No trades-unionist has talked like that since the great wave of prosperity broke. Doubtless, another great wave would have the same buoyant effect; but for the present life is too serious for such exuberance. The fine enthusiasm for organization among unskilled laborers disappeared as rapidly as the organizations themselves did with the first signs of storm. "They were all right in fair weather," remarked a former enthusiast recently, "like your Knights of Labor; opened a lodge every day, and all that. But they never stand up before regular assessments and stormy times." Not that there is any hostility to such organization now. On the contrary, the trade councils on the Tyne and elsewhere are still making efforts to get less skilled artisans to unite. Indeed, division of labor and machinery are making the more skilled feel a

* *The Conflicts of Capital and Labor*, pp. 174, 175.

little their dependence on those just below them, thereby stimulating at least a commercial sense of solidarity. Even another movement towards organization of agricultural and other laborers would be welcomed as a hopeful sign of self-improvement, and probably would be assisted somewhat by many of the leading unionists; but they are not forcing the matter any longer. Money is the real test; and any spirit of fraternity which fails to materialize in weekly assessments is held to be false and misleading. Besides, the unions have quite enough to do to hold together their own special trades; for, so far from representing "for practical purposes" or any other purposes what Mr. Howell calls "the strength of the whole body of skilled workmen," it might even be questioned how far, in many cases, they represent the efficient strength of the whole body in the best organized trades. In the report for 1887, already referred to, after commenting on the complicated task the unions have assumed in providing for their members under almost every phase of industrial difficulty, Mr. Burnett adds:—

They cannot by any means be said to include within their ranks anything like the great body of the workmen of the kingdom; but there is little doubt their members are the flower of their respective trades. No union can be very powerful for trade purposes which does not possess as members the great body of men in the trade; and those who most nearly approximate this standard have undoubtedly the greatest influence on the condition of their members. The work of obtaining members from those outside is, therefore, of the first importance; but even here the greatest prudence must be observed. As societies paying benefits to unemployed members, they must pay due regard to the capabilities as workmen of those they admit; for it is a well-known fact inferior men are most often out of work. Then, as friendly societies paying sick, funeral, or disablement benefits, they must also have regard to the health and constitution of candidates for admission. In this way, it may be argued that membership of a trade union is a good rough test of a man's ability, which to a large extent justifies the special rate of wages which members of such societies demand and generally obtain. It is often assumed that trade unions demand one uniform rate of wages, which must be alike paid

to the good workman and to the indifferent one. This is a mistake. The union simply lays down a minimum rate of wages, below which its members shall not work. Above this there may be and is a wide range of values. Nor can the enforcement of this minimum rate be said to be in any sense arbitrary. As a strict matter of fact, it is as much fixed by the employer as by the union.

The union says by its rules that it will admit no one as a member who is not in receipt of the ordinary wages of his shop or district. If the candidate is not obtaining this rate, he is not admitted; but, if he is receiving it, his value is really vouched for by the employer who has fixed his rate of wages. The justice of a minimum rate regulation is thus established. Into the more debatable range of questions connected with trade unions, it is not here necessary to enter. Such bodies exist as a part of our social system, and their extent and influence entitle them to have the main facts of their existence fully stated.

Here, observe, it is stated almost as an axiom that no union can be very powerful for trade purposes which does not possess as members the great body of men in the trade. Let us try some of the principal unions by this test.

The Friendly Society of Iron Founders, one of the oldest and best organized of all, has on its books about 12,000 members. The monthly and annual reports of the General Secretary, Mr. Hey, are models of accuracy; and the general conduct at the central office at London illustrates admirably both the thoroughly business-like administration which has won so much respect and confidence, and the immense educational training which has come with the growth of the unions and the multiplication of their functions. The monthly reports contain bulletins of the state of trade in various localities, tabulated statements of the various benefits paid for sickness, travelling, and the like. Moreover, the remarkable vitality of the organization has been repeatedly demonstrated by severest trials; and yet, with all the constant and untiring efforts of the General Secretary and of the branches themselves, it has never been possible to secure above half the eligible members in the trade. With 12,000 in the society, an

actual census has shown as many more outside, a very large proportion of whom know they would be welcomed with open arms. These men—intelligent, skilled artisans—are not to be persuaded. When trade is brisk, they are too improvident to join an expensive organization which has not yet recovered from the last period of depression and is not likely to help them till the next; when trade is dull, they have no choice.

Take next the most conspicuous and energetic of all the English trade societies, the Amalgamated Engineers. The total membership has been about 53,000 of late years, with a reserve fund of £3 per member, though it will be seen that the returns for the first four months of the present year show a considerable increase in numbers. It was this society which fought so long, hard, and successfully in the great Newcastle strike for a reduction of hours in 1871, and eight years later, with rather less success, resisted an advance in hours. Yet with all the prestige of occasional success and of numerical superiority to other unions, and with all the power of a large reserve fund, the Engineers have never been able to muster above a third of the eligible men in their trade. Like the Iron Founders, they have simply held their own, though their Secretary has of late been encouraged by large accessions.

Turn now to miners, in England, Scotland, or Wales. Here is a peculiar set of men, to whom the epithet *skilled* is often very grudgingly applied by the uninitiated, whose only criterion of skill is the quality and finish of the article produced. The incompleteness of organization is even more conspicuous here. And yet these sturdy men, with strong local peculiarities which reflect the conditions of their work,—even to the thickness of the seams and the hardness of the coal they hew,—have produced many able leaders and played a striking part in social and political agitation. Their members in Parliament are conspicuous among what are called labor leaders, including, in

is a dangerous thing," said an old Lancashire co-operator, in explanation of the rather sordid inconsistencies between the profession and the practice of co-operators; and surely, however hardly the rich man enters the kingdom, the man who is just getting rich will have to squeeze more hardly still. Nevertheless, the compensation for all this case-hardening of business relations, denied in one way, has unexpectedly come in another. For these same joint stock companies, by the publicity of their balance sheets and the actual participation of workingmen shareholders, have furnished the unions a basis of fact for their demands,—an actual knowledge of business methods, fluctuations in markets and profits, and a thousand and one details of inestimable value in enabling them, on the one hand to make good their demands for better wages, shorter hours, and more considerate treatment, and on the other to avoid the discredit and disaster of unjust and unreasonable demands. Indeed, the chief debt which trades-unions owe to co-operative production and the various forms of profit-sharing and partnership enterprise, is for contributions to experience and information which enable a comparatively small body of artisans often to exert great influence by well-timed and well-calculated demands.

Not only is this knowledge, based upon experience and armed with documentary proof, of immense importance in the immediate relations of employer and employed: it also sets in motion the still more potent engine of public opinion; for, in matters of trade and business, public opinion is the opinion of men who are not mere disinterested spectators, but in one capacity or another are parties to all industrial transactions. How potent a friend it is when once enlisted in behalf of any class interest, and how easily it may be forfeited by ignorance and blundering, may be seen in the recent history of English and American trade organizations. To their credit, the English unions

have thus far retained the confidence that slowly supplanted the profound distrust which preceded the report of the Parliamentary Committee which investigated the Sheffield outrages in 1867. The tangible form which its assistance sometimes takes is seen in the active support given by public men — sometimes members of Parliament, who could scarcely be accused of posing as labor representatives — in speeches, through the press, and even in more negotiable aid of what seems to them a just demand by the workmen in one of the great coal or iron districts.

I have spoken of the way in which better information checks the tendency to exaggeration in regard to foreign competition and the probable loss of industrial supremacy through the short hours and better payment demanded by English unions. It is almost ludicrous to recall the part which this ancient cry has played in labor agitation and legislation in England. There is a not very dusty tradition to the effect that no other country has any right to manufacture anything; and even now there are extant specimens of the type of manufacturer who believes that in the beginning God made England to be the workshop of the world, and the world to be the market thereof, and that modern innovations in this divinely preordained arrangement have for the most part been due to the impious conduct of labor organizations. Therefore, partly because they believed it and partly because they thought it good for the working people, a portion of the business men in England have always been periodically haunted by the ghost of foreign competition. Thus far, it has generally proved a Jack-in-the-box affair, easily crushed back into place and sat upon until there was occasion to let it rise again for the edification of the too ambitious workman; and no one was seriously deceived, least of all the people whom it was hoped to instruct. But of late years the thing seems less inclined to "down," and even the trades-unions themselves are beginning to think there may be something in it.

The international division of labor in which England has taken the lead has made her the workshop of the world, perhaps; but it is becoming more evident that the foreign and domestic policy of the world's workshop must be dictated by a proper regard for the good will of its customers. Things must be made cheap, as well as good; and, wherever labor is an important item in the cost of the finished product, the workman must be absolutely sure that his greater efficiency atones for whatever advantages he has over workmen in competing countries,—in wages, hours of labor, or sanitary regulations. To *assume* that this compensation exists in face of the longer hours, increasing efficiency, smaller pay, and the imported English machinery in some parts of the Continent, seems rather dangerous; and the trades-unions no longer make the assumption. Consequently, we find the General Secretary of the Amalgamated Cotton Spinners, in the Annual Report for 1887, defending the refusal of the executive committee to comply with the suggestion of the previous Congress for a general ballot of the societies on the eight-hour question on the following grounds:—

Every workman [he says] is, in the abstract, in favor of reducing his working time. It will, however, readily occur to all minds that it would be worse than foolishness to reduce our working hours until our *Continental* and *American* competitors had come to something near our level. [And again:] We know that plenty of workmen would support an eight-hours bill, if overtime were allowed, as they would then as now get an extra price for overtime. An indication that workmen are ready for an eight-hours working day will be when all overtime, except for repairs, is abolished. Even then we shall not be justified in adopting it unless it is simultaneously adopted by at least half a dozen other nations who have well-developed industries. Under the circumstances, we feel assured that you will indorse the action of your council in refusing to make themselves parties to what, under present conditions, must simply be a ridiculous *fiasco*.

It is not safe, however, to draw the hasty inference that the missionary interest in foreign labor, so often observed,

springs from this peculiar, enlightened self-interest. The "international" dream has always more or less disturbed the rest of the least romantic labor organizations; and, even as recently as 1883 and 1886, English trades-union delegates attended international congresses at Paris. Still, whatever their dreams, the English unions have seldom allowed any purely sentimental impulses to get the better of their caution of late years; and this persistent interest in foreign organizations contrasts rather strikingly with the contemptuous way in which they would be likely to treat similar organizations at home. For many of the organizations represented at the London Congress in November, 1888, could be called *trades-unions* only by courtesy of definition, which included schoolmasters as well as navvies; and, still worse, they were full of the Frenchy enthusiasm for things in general and the same heretical belief in legislative omnipotence that has made socialism such a thorn in the flesh to English unions. And it is further significant that, in spite of the unsatisfactory character of these deliberations in London, and in the face of the refusal of the Parliamentary Committee to take any interest in the proposed Congress to be held in Paris during the summer of 1889, a considerable number of English unions have already determined to send delegates to this next assembly.

With regard to the future internal or administrative policy of the unions as great benefit societies, it is only necessary to add a word touching the charge of actuarial unsoundness which is most frequently brought in connection with the provisions for superannuation. We saw at the beginning that in comparatively recent years the difficulties of keeping up a purely offensive and defensive organization had brought many of the unions back nearer their old allies, the friendly societies, and emphasized the friendly benefits in proportion as the expenditure for trade

disputes seemed less important. Unfortunately, in the most important and most difficult of all these benefits, superannuation, their self-confidence and zeal have long carried the societies far beyond the actuarial possibilities of the provisions for assessment, so that this benefit has been a constantly increasing burden. The danger was pointed out by friends and enemies alike years ago, and the experience of the six societies shown in the table * shows the universal tendency towards greater embarrassments. A single extract from the report of the Iron Founders for 1887 will suffice to show the anxiety which this benefit causes:—

Superannuation.—The cost of this benefit is constantly and continually increasing; but we have so many times brought the matter before our members' notice, and so little has been effected, that we are not over-anxious to deal with the question in our reports. It may be taken as a certainty that it will have to be dealt with, and before very long, or the effects will show themselves more visible year by year. A question of such magnitude as this should not be dealt with entirely from a sympathetic feeling and spirit, but any settlement or arrangements which at any time may be made should be based on actuarial calculation. . . . In 1871, the cost of this benefit was £1,792, or three farthings per member per week; in 1882, the cost was £4,786, or twopence per member per week; while in 1887 the cost was £7,602, costing over threepence per member per week. . . . The special attention of all our members should be devoted to this part of our system; for, if by our efforts we can make the benefit stable, a great good will have been done for future generations.

It would seem safe to predict from these figures that young men would hesitate to enter a union with this prospect of an increasing burden of superannuated members; and yet the figures for 1888 show little or no hesitation on this ground. During the year, 250 men came upon the superannuation benefit, 56 of them having been in the society over 40 years,—an indication of the way in which laws for better sanitation and regulation of work-shops are said to have lengthened the average years of

* See Table D, Appendix.

the organization itself, giving an outlet for energy in self-help, and preventing any dangerous concentration of attention purely upon trade disputes, to say nothing of the enormous educational discipline involved in these added responsibilities. The trades-unions, moreover, have no formidable competitors in the unique and characteristic benefit which, as trade societies, they are specially adapted to administer,—the out-of-work or donation benefit, to which attention has been repeatedly directed in the statistics given above. From its peculiar fluctuations and liabilities to abuse, this benefit cannot well be administered by anything but a trade society, stimulated by all the incentives of personal economy in detecting imposition, and aided by intimate knowledge of the special conditions of each trade in seeking employment for those who are idle. It is this benefit which we found to be the backbone of the most representative of the trades-unions, deriving peculiar economic significance from its relation to periodic fluctuations and seasonal activity of trade.

EDWARD CUMMINGS.

THE DIRECT TAX OF 1861.

THE direct tax laid by the act of Congress of August 5, 1861, was the fifth levy which has been made under the provisions of the Constitution, requiring that "representation and direct taxes shall be apportioned among the several States . . . according to their respective numbers." There would be little risk in predicting that this will also be the last resort to a method of taxation which the framers of the Constitution thought important enough to hold a place in one of the difficult compromises embodied in that instrument. The insufficiency of the method for revenue purposes, the confusion which has arisen as to the meaning and incidence of a direct tax under the Constitution, the extraordinary inequalities which grew out of the circumstances under which the last levy was made, and the really insoluble questions raised as to the effect which refunding the tax would have in mitigating or aggravating those inequalities, make it altogether probable that, in any future stress of fortune, relief for the Treasury will be sought anywhere else rather than in a resort to this discredited source.

The phrase "direct taxation" appears to have been introduced in the Convention of 1787 by Gouverneur Morris, on July 12,* when he made the motion, which was carried, "that direct taxation ought to be proportioned to representation." The Convention, perhaps, had no clear opinion as to the precise meaning of the words here used;† but it is plain that Morris had in mind some

*The use of the same expression in what purports to be the draft of a Constitution offered by Mr. Pinckney, May 29, need not be considered, in view of the plainly garbled text of that document. Elliot, *Debates*, v. 130, 578.

†Thus, on August 20, when the report of the Committee of Detail was under discussion, "Mr. King asked what was the precise meaning of direct taxation. No one answered." *Madison's Debates*, in Elliot, v. 451.

well-marked distinction between direct and indirect taxes. He had proposed at first simply that "taxation shall be in proportion to representation." To this it was objected that, although just, this plan might be embarrassing and "might drive the legislature to the plan of requisitions"; and Morris thereupon, admitting that objections were possible, "supposed they would be removed by restraining the rule to direct taxation. With regard to indirect taxes on exports and imports and on consumption, the rule would be inapplicable." Wilson also saw no way of carrying Morris's plan into execution, "unless restrained to direct taxation"; and Morris then modified his motion, with the result that the phrase "direct taxes" passed into the Constitution.* It is clear that in Morris's understanding, and in Wilson's as well, none but direct taxes could be levied by an apportionment among the States, the others named requiring to be laid by a general rate.

From what source, then, did Morris and Wilson derive this classification, which set down as direct certain taxes having this convenient characteristic of being readily apportioned among the States? The answer to this question is, no doubt, to be found in Hamilton's suggestion that the writings of the French economists of the eighteenth century were the source.† The doctrine that agriculture is the only productive employment, and that the net product from land, to be found in the hands of the land-owner, is the only fund from which taxation can draw without impoverishing society, led them to class taxes habitually as direct, when laid immediately upon the land-owner, and as indirect, when laid upon somebody else, but in their opinion destined to be borne by the land-owner ultimately. This distinction between direct and indirect taxation, resting upon the supposed method of incidence upon a single class of persons, is fully developed

* Elliot, v. 302.

† See his brief as counsel for the United States in the Carriage Tax case, *Hylton v. United States*, Hamilton's *Works*, vii. 845.

and used by Quesnay, Mercier de la Rivière, Dupont de Nemours, and Turgot. It was a necessary result of their reasoning, became familiar in all the discussions of the school in France, and, we can hardly doubt, was carried to the knowledge of readers in political science in other countries, during the short-lived pre-eminence of the Physiocrats.* As for the kinds of taxes to be classed as direct, there was not complete agreement. Necessarily, taxes upon land or its returns were set down as direct taxes, and so too, taxes upon commodities, or consumption, were called indirect. Taxes upon persons, however, do not appear to be regarded by Quesnay, Dupont de Nemours, or Mercier de la Rivière as direct. The writer last named, after saying that the fund for taxation is in the hands of the land-owner, and that to draw from it otherwise than directly is a subversion of the natural order of society, lays down the principle that "la forme de l'impôt est indirecte lorsqu'il est établi ou sur les personnes-mêmes ou sur les choses commerciabiles."† In Turgot's writings, however, we find taxes upon persons occasionally classed as direct. Thus, in his *Plan d'un Mémoire sur les Impositions*,‡ he says of the forms of taxation:—

Il n'y en a que trois possibles:—

La directe sur les fonds. *Rost's comment: (sur capital funds, or business establishments)*

La directe sur les personnes, qui devient un impôt sur l'exploitation. (*sur les personnes qui exploitent les fonds*)

L'imposition indirecte, ou sur les consommations.

And in the fragment which we have of his *Comparaison de l'Impôt sur le Revenu des Propriétaires et de l'Impôt sur*

* Adam Smith did not adopt their use of direct and indirect, because he rejected the reasoning on which it rested; and he does not appear to have formally classified taxes under these heads upon any other principle, although he occasionally uses the terms "direct," "directly," and their opposites, with a near approach to their modern use.

† *L'Ordre Naturel des Sociétés Politiques*, in Daire's *Physiocrates*, 474. For Quesnay's use of the terms in question, see Daire, i. 83, 127; and for Dupont de Nemours', *ibid.*, ii. 354-358.

‡ Daire, i. 394; and see also 396.

+ "The form of the tax is indirect when it is placed upon persons themselves or upon commodities."

les Consommations,* a memoir prepared for the use of Franklin, a careful analysis of the same purport is made, although the point of formal classification is not reached. Of all writers upon economics in 1787,† Turgot was perhaps the one most likely to have the ear of American readers; and, of Americans, Gouverneur Morris and James Wilson were as likely as any to give him their attention. The former had already formed that familiar acquaintance with French literature and politics which made his singular career in Paris possible a few years later, and Wilson had been from 1779 to 1788 accredited as advocate-general of the French nation in the United States. There was, then, an easy and a probable French source for the meaning which they both attached to the phrase introduced by Morris.

It is to be observed, also, that there were some well-known precedents for levying by apportionment such taxes as those which Morris and Wilson probably had in mind. The French *taille réelle*, a tax on the income of real property, was laid by apportioning a fixed sum among the provinces and requiring from each its quota, as has been the practice in levying its substitute, the *impôt foncier*, ever since 1790. The *capitation* was also levied in France, before the Revolution, in the same manner. The English land tax, established under William III., had for ninety years presented an example of apportionment among counties and other subdivisions, leaving the rate for each locality to be settled at the point necessary to give the due quota. Other contemporary examples could easily be cited; but these are enough for the present purpose, being necessarily familiar in this country in 1787, and likely to have a strong influence.‡

* Daire, i. 409.

† Dupont de Nemours published his *Mémoires sur la Vie et les Ouvrages de M. Turgot* (16mo, 2 parts, pp. 156 and 216), in Philadelphia and Paris, in 1782, the year after Turgot's death. See Hildeburn, *Issues of the Press in Pennsylvania*.

‡ For the *taille* and *capitation*, see Pizard, *La France en 1789*, 257; De Prieux, *Traité de l'Impôt*, i. 224, 153. The Act of 1763 apportioning the English

personal property by general valuation, but remarked that, in the practical construction of the Constitution by Congress, direct taxes had been limited to land and capitation taxes, and that this construction was entitled to great consideration in the absence of anything adverse to it in the discussions of the Federal Convention or of the State Conventions which ratified the Constitution. Finally, when the whole subject was reviewed in the case of *Springer v. United States*,* Mr. Justice Swayne, giving the opinion of the court, declared it to be their conclusion "that direct taxes, within the meaning of the Constitution, are only capitation taxes, as expressed in that instrument, and taxes on real estate." The judicial interpretation of the phrase, "direct taxes," is well settled therefore, and in close accordance with the usage found in the writings of the French economists of the last century.

The acts of 1798† established the general plan on which all succeeding direct taxes have been levied. These acts apportioned the total sum of two millions of dollars among the States, divided them all into convenient divisions, placed every division under a commissioner, and provided the requisite array of principal and assistant assessors, collectors, supervisors, and inspectors. The quota of every State was to be assessed upon houses, lands, dwelling-houses, and slaves. Houses were to be assessed according to a classified valuation at rates fixed for the whole Union, and slaves were to be assessed fifty cents per head, if between twelve and fifty years of age; and so much of the quota of any State as was not covered by the levy upon houses and slaves was to be assessed upon lands and im-

* 103 United States, 586. This was a case arising under the Act of 1864 laying an income tax, the plaintiff in error maintaining that this, as a direct tax, should have been apportioned among the States, under the provisions of the Constitution.

† The Act of July 9, 1798, 1 *Statutes at Large*, 580, provided for the valuation of taxable objects; and that of July 14, *ibid.*, 597, provided for the apportionment and collection.

provements at such rates as might be required to make up the deficiency.* The tax was to be a lien upon the real estate and slaves of the person assessed for two years from the date when it became payable, and collection could be enforced by distraint and sale of personal effects. Wolcott had suggested, but had also disapproved, a plan for fixing a time at which a State might pay its quota into the Treasury and for prescribing collection by the authority of the United States "in cases of delinquency."† But no trace of any such plan is to be found in the acts of 1798. Beyond the bare apportionment, the States are not recognized except as mere geographical divisions. The acts provide solely for levy by the Federal Government upon its citizens, the individual tax-payer is the only party responsible, and no authority stands or can interpose between him and his government.

The framers of the direct tax acts of 1813‡ followed in general the lines laid down in 1798. Comparison of the acts will show revision and rearrangement and perhaps simplification of the system, but no serious change of theory. The tax of three millions is apportioned to the counties in every State, and it is provided that the State legislature may by act vary the county quotas, provided such alterations are duly certified to the Secretary of the

* This residual assessment upon lands closely resembles the method adopted in assessing the group of taxes of which the English land tax is the survival. See 10 William III., c. 9 (Rolls ed.); and Act of 1763, 4 George III., c. 2, §§ 3, 4 (Ruffhead).

† This plan, he says, "partakes of the system of requisitions upon the States, which utterly failed under the late confederation, and to remedy which was one great object of establishing the present government." *State Papers on Finance*, i. 436.

‡ The Act of July 22, 1813, 3 *Statutes at Large*, 22, provides for the assessment and collection, and that of August 2, *ibid.*, 53, for the apportionment. Gallatin sailed for Europe in May, 1813, but it seems probable that the direct tax bills of that year were among the bills spoken of in his letter of June 10, 1812, as already prepared in answer to a request from the Committee of Ways and Means. *Ibid.*, 614. It is interesting to observe that, in January, 1812, Gallatin appears to have lost his hold on the strict definition of direct taxes under the Constitution. *Ibid.*, 525.

Treasury; but the levy according to such alterations is made by virtue of the act of Congress, and not under the act of the State legislature.* The tax is to be levied on the value of lands, houses, and slaves, "at the rate each of them is worth in money," abandoning the peculiar method of a residual assessment upon land, adopted in 1798; and the provisions as to enforcement by lien and distress remain as before. In short, the theory of the acts of 1813 continues to be that of a levy by the general government upon the individual citizen, in no way different in principle from any case of national internal taxation. With a wise regard to convenience, however, the apportioning act provided that any State "may pay its quota into the Treasury of the United States," and thus secure a deduction of fifteen per cent., by paying before February 10, 1814, or of ten per cent., by paying before May 1; "and no further proceedings shall thereafter be had under this act in such State." The option thus allowed to the States did not, however, change the character of the tax as a tax upon individuals, or make it a tax upon States. Seven States assumed the payment of their quotas;† but the other eleven, in which the collection by federal officers was made as originally provided, were not for that reason in any sense delinquent as States, nor did they thereby fail in any obligation to be found in the acts of Congress or elsewhere.

The act of 1815, which provided for an annual tax of six millions of dollars, is to a considerable extent a literal transcript from the two acts of 1813, with such amendments in detail as experience or the proposed permanency of the tax required, but with no change in theory or in general procedure. And no change was made by the act

*§ 6 of the Act of August 2, 1813, 3 *Statutes at Large*, 71. For the painful effort of the Committee of Ways and Means to arrive at a county apportionment, see their report, *State Papers on Finance*, ii. 628.

† *State Papers on Finance*, ii. 860.

of 1816,* which simply repealed the provision for an annual tax, and laid instead a tax of three millions for the current year. In 1815, and also in 1816, four States assumed the payment of their quotas; and the collection was made by the United States in the other fourteen.

When the levy of direct taxation by apportionment was resorted to for the fifth time, in 1861, Congress found most of the work of legislation done for it in advance. The first revenue measure of the war provided for an annual direct tax of twenty millions,† to be laid on the value of lands with their improvements and dwelling-houses, "at the rate each of them is worth in money." In its general scheme and in its details, the act of 1861 was a revised transcript of the acts of 1813 and 1816. The theory enunciated in *Hylton v. United States* was unfamiliar to many members; and the Committee of Ways and Means had to labor in debate with representatives who wished to include personal estate, or incomes, among the objects of taxation. The Committee itself at first treated slaves as taxable property, as was done in the earlier acts. But, in its careful provision for dealing directly with the individual citizen of the United States and for enforcing a direct lien upon his property, the law of 1861 follows the earlier legislation, section by section. It makes the same provision for an assumption of quotas by the respective States at their pleasure, providing that any State may give notice of its intention "to assume and pay, or to assess, collect, and pay," the direct tax, and upon payment be entitled to a deduction of fifteen per cent. in lieu of the costs of assessment and collection. The date for giving this notice was the second Tuesday of February, 1862, and the expectation that the States would use this option was so strong that the act post-

* The Act of January 9, 1815, 3 *Statutes at Large*, 164; the Act of March 5, 1816, *ibid.*, 255.

† The Act of August 5, 1861, 12 *Statutes at Large*, 294.

poned the appointment of assessors and collectors until that day. But the greater completeness of the optional arrangement does not appear to import any change in the real bearing of the act as laying a tax upon individual citizens.

The recommendation of this tax to the attention of Congress by Secretary Chase, in his report of July 4, 1861, did not imply any strong reliance upon it. Mr. Chase advised the raising of "twenty millions, for the current year at least, by direct taxes or from internal duties or excises, or from both." It is probable that both the Secretary in giving this advice and Congress in improving upon it were influenced by the fact that the earlier legislation on direct taxation could be made available quickly,* and that time was needed for the study of any broader system of internal taxes. The direct tax had, in fact, far less to recommend it in 1861 than at the beginning of the century. The inequality of apportionment according to population, serious enough at first, had been increased by the concentration of wealth in the commercial and manufacturing States. Only the smallness of the sum to be raised made a special assessment upon one species of property tolerable, in a country where personal property had multiplied so greatly. And, finally, the slowness of the method, amply shown by four trials, unfitted it for an occasion when promptness of supply was of the last consequence. But all of the action at the special session of 1861 was essentially provisional, and both for the Secretary and for Congress it was a welcome reflection that twelve or fifteen millions could be

*The Chairman of the Committee of Ways and Means, Mr. Thaddeus Stevens, felt no mortification when Mr. Roscoe Conkling stigmatized the bill as "undigested." "It may be so, for it was a direct copy of one drawn by a man who was less wise than our critics are now. It was drawn by Albert Gallatin; and this undigested, ill-considered bill is an exact copy of his." *Globe*, 1861, p. 307. Mr. Collamer, of Vermont, remarked in the Senate that "the bill is essentially the same, in all its essential features, with the bill by which a direct tax has been laid four times in this government." *Ibid.*, 398.

payment should be made to the Treasury before July 1, 1862, or of ten per cent., if made before October 1, with the provision that such quotas might be satisfied by the release of liquidated and determined claims of equal amount due to any State or Territory by the United States. The settlement of the quotas by this process of offset, at a time when every loyal State had its account against the general government for military services, equipments, or advances of some sort, and the slow passage of such accounts through the forms of the Treasury, no doubt makes the collection from the direct tax, as given in the published tables, appear much slower than it was in point of fact.* Still, it can probably be said with truth that the government received nothing from the direct tax during the war which it would not have received otherwise. The loyal States which paid their quotas in services and equipments would have raised as many men and have equipped them as promptly if the direct tax had never been laid. Their quotas ultimately gave the government some facility for the adjustment of their accounts, but the military aid on which the quotas were virtually expended was not called out by taxation. In Delaware and Colorado, the tax was collected, after some delay, by the internal revenue officers of the United States; and thus, except some trifling amounts from the Territories, the accounts of the loyal States and Territories for the direct tax were cleared. The amount assessed upon all the States and Territories, except the eleven States in insurrection and the Territory of Utah, was \$15,027,534. Deducting the allowances made to States which advanced their quotas, the amount collected

* The annual *Finance Report* states the receipts from direct taxes down to 1870 as follows:—

1862,	\$1,795,332	1867,	\$4,200,234
1863,	1,485,104	1868,	1,788,146
1864,	475,649	1869,	765,696
1865,	1,200,573	1870,	220,103
1866,	1,974,754		

from the loyal States and Territories appears to have been \$12,937,805.*

There remain the eleven States which were in insurrection when the tax was laid and the Territory of Utah. More than one of the speakers in Congress urged as a recommendation of an apportioned tax that the amount allotted to any State in arms against the government could stand over for ultimate collection, and that communities which refused to contribute to the revenue in any other form might thus be made to yield finally a share of direct taxation. The act of 1861 accordingly provided (§52) that, if the execution of the law should be prevented in any State by rebellion, it should be the duty of the President, "so soon as the authority of the United States therein is re-established, to collect the sums due from the persons residing or holding property or stocks therein," with interest for delay. Detailed provision was made and special machinery was established for the same purpose in 1862 by the act of June 7, "for the collection of direct taxes in insurrectionary districts within the United States and for other purposes." This act made full provision for the levy of the tax in case of partial occupation of the territory of any State by the forces of the United States. It authorized the levy upon lands in insurrectionary States according to the last State valuation, and charged every parcel accordingly with its proportion of the quota of the State, and with a penalty of fifty per cent. in addition, the tax and penalty becoming a lien upon the lands in all States or parts of States declared by the President, by due proclamation, to be in insurrection.† A board of three tax commissioners was

* This is the statement for February 18, 1868, given in *Cong. Doc.*, 1867-68, *House Reports*, No. 552, 44, deducting \$8,409 overpaid by Wisconsin. It is to be observed that the figures given cannot be reconciled with precision, the methods of accounting in the Treasury having been inconsistent; e.g., *ibid.*, 9, 15.

† The proclamation of July 1, 1862, declared in insurrection the eleven States, with the exception of thirty-nine counties of Virginia, comprised in the inchoate State of West Virginia.

to be appointed for every insurrectionary State, to enter upon their duties whenever the commanding general entering any such State "shall have established the military authority of the United States throughout any parish or district or county of the same." Sixty days were allowed for payment by the owner of any parcel of land after the amount of tax due upon it should have been fixed; and thereupon all lands upon which the tax was unpaid became forfeited, and the commissioners were required to advertise them for sale to the highest bidder and to strike them off to the United States, unless some person should bid as much as the tax, penalty, costs, and interest for delay of payment. Provision was made for the redemption of property thus sold, if the owner or any person in interest should appear within sixty days and make payment, taking an oath to support the Constitution of the United States. Redemption within one year was allowed to any owner who should be unable to make payment by reason of the insurrection, and should have taken no part therein after the passage of the collection act; and two years for redemption were allowed to absentees, aliens, or persons under legal disability.

Under the act of June 7, 1862, commissioners from time to time made assessments for the direct tax in about one-half of the counties in the eleven States, and made collections in all those States, except Alabama.* Assessments were enforced by sales of lands for taxes in districts occupied by the federal forces until the order of the Secretary of the Treasury, on May 17, 1865, suspending all such proceedings. The sales were necessarily within narrow areas,† and the amount received

* *Report of the Commissioner of Internal Revenue for 1883, in Finance Report, 165.*

† The sales in Virginia were in the counties of Alexandria, Accomack, and Northampton,—that is, near Washington and on the Eastern Shore; in South Carolina, they were confined to the parishes of St. Helena and St. Luke, in the Sea Islands; in Florida, to St. Augustine and Fernandina; in Tennessee, to Memphis; and in Arkansas, to Little Rock.

of direct taxes in the insurrectionary States, and to turn over the business to the local officers of internal revenue. A joint resolution of July 28, 1868, continued the suspension of proceedings until January 1, 1869; but, when that day came, no further measures were taken by Congress or by the Executive, and thus the further collection of the tax was practically abandoned. Attention to the subject was asked for by the Commissioner of Internal Revenue in 1868,* but the subject had clearly become too much embarrassed to be inviting. It is clear, however, that down to this time the government, in collecting the tax, had dealt with the individual tax-payer precisely as in all other cases of taxation. The privilege of assumption, allowed to the States by the original act, not having been used, had expired by its own terms; and, as no renewal of the offer was made by the United States, the direct tax continued to be an obligation resting upon the individual when assessed, secured perhaps by a lien upon his land, but binding upon no other person or body of persons whatever.

It was, perhaps, owing to the expectation of an arrangement for the assumption of unpaid quotas by the Southern States that the First Comptroller of the Treasury, in a statement of accounts between the general government and the several insurrectionary States on May 20, 1868, charged them with their respective quotas as if some legal liability therefor rested upon them. This view of the case, although not uniformly followed by subsequent comptrollers,† appears for many years to have fixed the construction of the law for the accounting officers in the Treasury.‡ The States being charged each with its un-

* See *Finance Report* for 1868, 482.

† See the important adverse decision by A. G. Porter, First Comptroller, giving the legislation from 1798 and much documentary matter, *Senate Exec. Dec.*, 1879, No. 24.

‡ See *House Exec. Dec.*, 1885-86, No. 158, 15.

"It must be acknowledged that this construction of the law appears not to conform to the intention of the acts upon this subject; but the decision

paid balance of direct tax, moneys becoming due to them from the general government upon other accounts, as from the sale of public lands in which they were interested jointly with the government, were not paid over, but were credited to them by way of offset. The extreme point in this official confusion was reached when, in 1883, the First Comptroller decided that the sum of \$35,555, appropriated by act of Congress to refund to the State of Georgia money expended by her for the common defence in 1777, should be paid to the Treasurer of the United States, "to the credit of the State of Georgia on account of direct taxes charged against the State." * As far as a government can be said to remember or forget, the government of the United States must be said at this juncture to have forgotten what it meant by the direct tax of 1861. The true meaning of the tax was settled, however, by the highest authority, and the whole subject placed in its true light, when the Supreme Court of the United States, in the case of the *United States v. Louisiana*, at the October term, 1887, † decided that the direct tax law in 1861 did not create any liability on the part of a State to pay the tax, and that the apportionment merely designated the amount to be levied upon the property of individuals in the several States, without any liability attaching to the State in its political and corporate character. This decision finally leaves the unpaid quotas of the direct tax in precisely the same position as any other tax assessed upon individuals, which the United States government has been unable, or has neglected, to collect in full. ‡ It is difficult, for example, to distinguish it in any essential particular from the case of

fixing it as a State debt has such force in the Treasury Department as to preclude any other view of the direct tax than that of a debt due by the State. . . . If the State owes the debt, the land-owner does not owe it." *Ibid.*, 17.

* 4 *Decisions of the First Comptroller* (*House Miscell. Dec.*, 1883-84, No. 86), 354.

† 123 *United States*, 37. The opinion of the court was given by Field, J., no one dissenting.

unpaid income taxes laid during the war and collected by severe process throughout the loyal States, but neither then nor at any other time collected in the insurrectionary States.

This decision plainly makes it necessary, in determining the amount still unpaid on the quotas of the Southern States, to disregard all the accounts with tax commissioners and with States, and to set down simply the amount of taxes reported as uncollected. These are the amounts due from individuals; and, as no individual owes any more than the due assessment upon his property, by reason of any other person's default, so no individual owes any less than that assessment, because of money stopped on its way to the State Treasury, or otherwise coming to the United States from any of his fellow-citizens. The amounts reported as remaining uncollected,* in the eleven insurrectionary States and in Utah, are given in the following table:—

	<i>Quotas.</i>	<i>Uncollected.</i>		<i>Quotas.</i>	<i>Uncollected.</i>
Alabama, .	\$529,313	\$529,313	N. Carolina, .	\$576,196	\$196,742
Arkansas, .	261,886	107,185	S. Carolina, .	363,571	141,174
Florida, . .	77,523	72,762	Tennessee, .	669,408	277,506
Georgia, . .	586,367	501,940	Texas, . . .	355,107	174,265
Louisiana, .	385,867	71,886	Virginia, . .	729,071	286,663
Mississippi, .	413,085	343,500	Utah, . . .	26,982	26,982
				<hr/>	<hr/>
				\$4,972,485	\$2,731,418

The process of collection in the insurrectionary States during the war by assessment and sale of property in limited districts, under the act of June 7, 1862, caused great hardship to dispossessed owners; but this was buried

*These sums are taken from the accounts stated by a commission, appointed by Secretary Manning in 1885, to investigate and adjust all the direct tax accounts. *House Exec. Doc.*, 1885-86, No. 158. See particularly, pp. 24-31 and 7-12. The sums found by this commission to be still due differ from the amounts stated by Secretary Folger in 1884 and from the statement made by the Commissioner of Internal Revenue in 1885, and the Secretary and the Commissioner also differed from each other. *Ibid.*, pp. 14, 15. The report of the commission appears to have been adopted in the Register's office. See *House Reports*, 1887-88, No. 552, p. 44.

lots, to be sold "to the heads of families of the African race."* Under these arrangements, some lands, bought in at the tax sales for the United States, remained for several years in the possession of the government; others were resold at a large advance; others still, having been sold and partly paid for, reverted to the government, and were resold or remained in its possession. The transactions became involved, litigation sprung up, and it became plainly impossible for the government to manage its complicated interests in the Sea Islands with advantage. Congress, therefore, by a general act, dated June 8, 1872, with judicious liberality provided that any lands owned or held by the United States, under the collection act of June 7, 1862 and the subsequent proceedings, and not used for public purposes, might be redeemed by the original parties in interest or their representatives at any time within two years, upon payment of the tax and costs, with interest at the rate of ten per cent., saving the rights of all persons who might in the mean time have made valuable improvements. Lands not redeemed at the end of the two years were to be sold by public auction, but by subsequent acts the period for redemption was extended to February, 1877. The school farms spoken of above were not covered by this act, but were similarly provided for by the act of March 3, 1887, which closed a troublesome and exceptional piece of administration.

The result of these operations is that, the quota of South Carolina being \$368,571, of which \$141,174 remains unpaid, the Treasury of the United States appears to have received in cash \$468,864, besides sums amounting to \$134,592 paid to the Freedmen's Bureau and otherwise disbursed on various accounts, of which a part should no doubt be added to the sums accumulated in the

* These instructions, with a variety of other documents, are annexed to the report of A. G. Porter, First Comptroller, in *Senate Exec. Doc. of 1879*, No. 24, p. 223.

and permitting the tax upon the land adjoining to remain unpaid is not equitable." The reason is undeniable; but, after all, could equity be secured now by resuming the collection of a tax, all proceedings under which have been suspended for twenty years? The condition of landed property has altered, in one place for the better and in another for the worse, throughout the States concerned; the rights in such property have changed hands, and all the relations once existing between the individual members of any body of tax-payers and forming the basis of possible equity in 1861 have vanished. A large part of the individuals themselves have disappeared. To levy upon the lands on which the tax is unpaid would be, in a great proportion of cases, to collect a tax from subsequent purchasers under a claim which they were justified in believing that the government had abandoned long ago. It has been declared with great positiveness that the government has lost its hold upon the land, but this point need not be considered. If the government still retains the right of assessment on the lands of delinquents, the exercise of that right upon the lands as now owned and used would be universally recognized as too difficult and too certainly unjust, as between members of the same community, to be an admissible expedient. The cure of the difficulty by the first method appears, then, to be out of the question.

The second mode of dealing with the case, the opposite of that just considered, is to return such taxes as have been paid under the legislation of 1861, and to remit all that are unpaid. In other words, equity being unattainable by completing the levy, secure it by undoing what has been done. It is not within the proposed scope of this paper to discuss the constitutional question as to the right of Congress to lay taxes, let us say in 1890, in order to refund taxes which were properly levied and collected according to law in 1862-66. We are here concerned

by one gentleman, will pay towards the refunding operation not less than \$840,000, but will receive less than \$72,000; New Hampshire, it was said in the Senate, will receive but \$185,000, and will contribute at least \$300,000. The incidence of our taxation is too uncertain to make these calculations important; and, in most cases of expenditure for public objects, such considerations as to the exact balance of benefits and burdens are properly disregarded. But the present is a case in which the attempt to restore such a balance with respect to a particular transaction is the main proposition; and it therefore becomes not only justifiable, but necessary, to inquire whether the proposed equality would be real or only apparent. The answer to this question is found in the census tables, where the redistribution of tax-paying power in the last quarter of a century is too manifest to require recital.

The third method of dealing with the subject would be, if we can neither complete the collection nor return the tax without producing fresh mischief, to leave the matter where it is. No doubt, this course, as well as the others, is open to objection. It is a peculiarity of the case that the United States can neither act nor refrain from acting in it without running counter to some instinct of justice. But there would be less disturbance of existing interests, and time would heal all difficulties more quickly, it is probable, if it were frankly recognized that, in such matters, the errors or misfortunes of the past are finally beyond all remedy. The funds which have been collected from the proceeds of lands leased or resold, or from the surplus of tax sales, might be returned to the parties representing the original ownership, and the account of the direct tax could then be wound up, as that of the other taxes of the war has been, without further inquiry as to the degree in which different bodies of citizens contributed to them.

It is the second of these methods, however, which has

finally, moneys received from the sale of lands bid in for the United States at tax sales in any State, in excess of the taxes assessed, were to be paid to the owners of the land bid in and resold, or to their representatives.

This bill was not reached by the House of Representatives after the veto, and therefore failed to become a law. There can be little doubt that it will be passed by the present Congress. It is sufficiently clear from its terms that the combination of local interests in its support is powerful, and it has every political chance in its favor. The passage of the measure, whenever it comes, will close a singular chapter in the history of taxation,—a chapter the repetition of which, we may be sure, our people will not be easily tempted to risk hereafter. The direct tax provided for by the Constitution has at last been effectually discredited as a source of revenue, and it has also been too prolific of misconception and confusion to have any interest henceforth as a practical measure of finance.

CHARLES F. DUNBAR.

subsequently resold by the United States for \$455,000. So, after all, the money we are to pay back to the owners of this land in South Carolina is only about the sum that we received on the resale of the land." *Cong. Record*, 1888-89, p. 2139.

A NEW VIEW OF THE THEORY OF WAGES.

I.

THE rate of wages, or the price of labor, can only be in equilibrium when the demand for labor and the supply of labor are equal; and if it be assumed that the supply is, for the time being, a fixed quantity, it is evident that such equality can only be brought about by causes which act upon the demand.

In a former article in this *Journal** I stated the condition upon which the demand for labor equals the supply, as follows: "The price of a given amount of labor is equal to the price which is paid for the use of such amount of auxiliary capital as can replace it in those operations where the two things may be indifferently employed with equal pecuniary advantage." This formula fails, however, to show what the actual price of labor is. It does not even show what is the nature of the ultimate causes which determine that price. It cannot therefore be accepted as the last word in the Wages Question.

Now, before we proceed any further, let us observe that the Wages Question really contains in itself two questions, one relating to the aggregate amount of the fund out of which the compensation of both labor and capital is paid and the other relating to the manner in which this fund is shared between them. The former is a question as to the causes which affect wages and interest alike. The latter is a question as to the causes which affect them divergently. In the first case, the interests of labor and capital being identical, neither can gain anything without the other sharing in its gain. In the second case, however, their interests are opposed, and gain for one can only be had at the cost of the other.

* *Quarterly Journal of Economics*, October, 1888, p. 60.

This distinction must be borne carefully in mind in every discussion of the relations of labor and capital. Failing to observe it, some writers, anxious to justify the existing order of things, or lead away by their own optimism, have shut their eyes to all causes of conflict and have asserted the universal prevalence of a harmony of interests between laborers and capitalists. Others, with equal blindness, refuse to see anything but irrepressible discord in the relations of the different classes, and upon this assumption demand the overthrow of the entire social and industrial organization as at present constituted.

II.

Whatever occasions an enlarged return to the outlay of equal amounts of capital and labor enlarges by so much the compensation of each.

Whenever wages and interest are both high or both low at the same time, or whenever they rise or fall simultaneously, this is because the productiveness of industry is great or small, rising or receding, as the case may be. Whatever affects the amount of the fund which is distributed in wages and interest, and by so doing increases or decreases the compensation of labor and that of capital, without affecting the rate of interchange between them, does so by reason of its effect upon the productiveness of industry.

The degree of the productiveness of industry is due solely to the profusion or scantiness of the natural resources, and to the knowledge and skill which men bring to their development. When these abound, not only are the returns to industry large absolutely, but they are also large relatively to the amounts of labor and capital engaged in it. At different times and places nature and art differ greatly in the profusion of the products which they yield to industry. In the abundance or scantiness of that product, labor and capital rejoice or suffer alike. On the

steppes of Northern Russia, a barren soil and a stern climate, combined with a rude system of agriculture, afford meagre returns to all classes. In the settlement of our Western States, on the other hand, a happy combination of natural advantages, and of skill in utilizing them, has induced a degree of prosperity among all classes which is unequalled in the world's history, and which shows itself in the high rates of wages and of interest prevailing at the same time.

The natural resources vary greatly from place to place ; but at any one place, or for the world taken as a whole, they are nearly permanent in character and amount. But, by the very reason that they are permanent considered in themselves, when considered relatively to labor and capital their abundance shrinks as the amounts of labor and capital increase. Hence arises the *law of diminishing returns* to increasing application of capital and labor. In this respect, art is more liberal than nature. The degree of human knowledge and skill, unlike the natural resources, is continuously progressive ; and the increase of labor and capital stimulates improvements, and gives rise to a *law of increasing returns* to the increasing application of labor and capital. The conflicting tendencies of these two laws may result in the preponderance of one or of the other, according to circumstances, or may in some cases maintain an even balance between them.

But, if we disregard the influence of increasing and of diminishing returns, the amounts of labor and of capital do not at all affect the productiveness of industry, but only fix the extent of the field actually cultivated. An increase in the amount of either will widen the bounds of industry, and a decrease will restrict those bounds. Whether the supply of labor increases or the supply of capital, or both, in either case there ensues an expansion of productive operations. Should the supply of labor and of capital increase at an equal rate, the various channels of

industry would simply run so much the fuller,—a larger volume of the same wants would be supplied by a larger volume of the products of the same industries; but interest and the price of labor would remain unchanged.

The variations in the degree of productiveness of industry are incontestably a subject of profound interest. Their causes, however, are simply and easily explained. Those influences which affect interest and wages divergently are more recondite. They will absorb the greatest part of our attention in the following pages, partly for this reason and partly because public interest is more eagerly directed to them, in that they give rise to that conflict of interest between laborers and capitalists, to allay which is to-day more urgent perhaps than any other task of practical economics.

III.

We easily recognize the most obvious reason of wages being high or low relatively to interest in the abundance or scarcity of capital as compared with the supply of labor. If capital is abundant relatively to labor, other things being the same, wages will be high and interest low; and, in the reverse case, wages will be low and interest high. This fact was made the foundation of the Wages Fund theory, which was long thought to be a complete and final solution of the Wages Question. We shall not enter here into a critical examination of that theory, which has been attacked and defended so often and with so much warmth. Had its advocates carried their analysis of the subject a little further, they could scarcely have failed, however, to observe that the demand for labor depends largely upon its price; and, had they duly attended to this fact, they would inevitably have been led to the conclusion that, instead of the rate of wages depending upon the amount of a fund set aside to buy labor, the amount of this fund really depends upon the rate of wages, of which it is, properly speaking, the outgrowth and result.

So soon as we begin to look a little beneath the surface of things, and perceive that capital and labor are joined in very different proportions in the performance of different operations, we are compelled to admit that other things besides the amount of capital must join in influencing the demand for labor.*

The first of these other influences to suggest itself is the nature of human desires. Desire is the child of appetite, and all industry and production are its offspring. Its laws are the very foundation of economic science; for only in order to gratify it, will men undergo the drudgery and the forbearance whereby labor and capital contribute to production. But the product of industry does not suffice to gratify every human want. Some must always go unsatisfied. In order to gratify as many as possible, man weighs one against another, and distributes his expenditures among them in the order of their urgency. Those wants which each man has the means to satisfy constitute his *effective desire*; and the sum of the effective desires of the community determines what things shall be produced, and dictates which of the various possible industries shall be actually prosecuted. When desire is driven by appetite towards commodities produced with an excess of auxiliary capital, it occasions a demand for auxiliary capital and raises the price paid for its uses; and, when it is driven towards industries employing an excess of labor, it occasions a demand for labor and stimulates its price at the expense of interest. Industry exists only to gratify desire. Nevertheless, desire can only act within the limits traced for it by the existing natural resources, and by man's knowledge and skill in turning these resources to account, or, in other words, by the existing state of nature and of art.

* Mr. Cairnes, in his revised form of the Wages Fund theory, does indeed bring into view more of the factors of the problem, but without any complete analysis of their workings.

The three causes just enumerated — the supply of capital, the character of human desire, and the state of nature and art — conjointly determine the demand for labor; and I know of no other cause whatever which joins in influencing it.

IV.

We have seen how nature and art determine the amount of the product of industry and the abundance of the fund from which capital and labor are both compensated. We shall now see how they also affect the division of this fund between wages and interest according to their influence on the relative demand for the use of labor and of auxiliary capital.

Nature and art absolutely designate what industries and what methods are possible. The possible forms of human industry are commensurate with the aptitudes of nature; and these are at any given time practically circumscribed by man's knowledge and skill, or, in other words, by the state of the arts as then practised. Nature and art may afford opportunities to set in motion large amounts of capital by small quantities of labor, or they may suggest channels of industry where great amounts of labor are assisted by little capital. As they do the one or the other, they favor the demand for auxiliary capital or the demand for labor, as the case may be. In different situations, nature affords the most diverse opportunities for practising different industries. In Australian sheep-runs and Colorado ranches, the amount of labor required is small out of all proportion to the capital involved. In Phœnicia, in Venice, in Holland, and in the old coast towns of Massachusetts, facilities for shipping and commerce built up, in naturally desolate regions, communities devoted to these pursuits, and in which a great capital was set in motion by a comparatively small number of hands. Thus, also, agriculture and commerce, manufactures and mining, have been distributed over the world's surface mainly in accord-

ance with the facilities of different localities; and, in the infinitely diversified forms they assume, they call for the application of exceedingly varied proportions of labor and of capital. Owing to the growth of commerce, it has come about that facilities of any kind are not confined to supplying the wants of the locality where they exist, but diffuse themselves, by means of exchange, over the whole world.

If in any two countries the relative prices paid for labor and for the use of capital differ, then such industries as require most labor tend towards the country where labor is relatively cheapest, while such as require most auxiliary capital gravitate to the country where labor is relatively dearest and where interest is lowest.* Although cotton is indigenous in China, interest and other costs of maintaining capital are so high in that country that it is doubtful whether, in the manufacture of cotton goods, China could compete successfully even for the home market against cloths imported from England or the United States. Were the tea plant, on the other hand, thoroughly acclimated in either of those latter countries, it is improbable that they could compete in the preparation of its leaves with the cheap labor of China. Hemp and flax require much disagreeable labor in their preparation, and their culture is appropriately located in Russia and Ireland, countries where labor is cheap and not fastidious.

No rule can be given for the varying effects of nature's influence, but the influence of art occasions a progress which tends almost uniformly in one direction. The increase of knowledge and skill almost invariably occasions an increase in the uses of auxiliary capital, so that the advance of industrial civilization is in great part a story of the substitution of auxiliary capital for labor. We

* "A need of resorting to direct manual labor in large proportion and a difficulty in substituting machinery constitute, under conditions of freedom, an obstacle to the profitable prosecution of an industry in the United States." *F. W. Taussig, Quarterly Journal of Economics*, vol. ii. p. 340.

will not stop to consider in this place how the natural resources and the state of the arts influence the constitution of human society in other ways. It is enough to have observed that, as they foster the demand for labor or for auxiliary capital, they raise the price or hire of the one so favored. This is their immediate effect, followed, of course, more remotely by the stimulus given to supply by the enhanced price.

V.

Although nature and art designate absolutely the possible industries and methods, they do not of themselves indicate which shall actually prevail. How, then, is the choice made between them? Since industry exists only to gratify human wants, the selection of its operations can only be decided by human desires. Interesting as the study of human desires and of the order of their succession would be in itself, it is only as they influence the relative demand for auxiliary capital and for labor that we have to do with them here. If at any time we knew the nature of the effective desires then prevailing, and knew also the methods by which their gratification is possible in the existing state of nature and of art, we could then tell what the relative demand for capital and labor at that time would be. And, if we could trace any correspondence between the relative urgency of human desires and the proportions of labor and of auxiliary capital required to prepare their respective objects, we could conclude as to the effect of growing affluence upon the relative demands for labor and for the use of auxiliary capital. Now, although there is no complete coincidence in the succession of these things, it may yet be of interest to note such general correspondence as may be found to exist.

The instinct of self-preservation dictates what desires must first be met. Life is dependent on food in a certain

small to justify the use of a costly plant, and where the element of taste largely enters, such as embroideries, paintings, and ornamental furniture. These correspond to the less urgent desires whose indulgence is restricted to the richer classes. But the production of such things forms an insignificant fraction of modern industry. Apart from them, labor probably bears the largest proportion to the capital employed in agriculture and in extractive industries, those mainly which furnish raw materials and supply the most imperious desires. Among the occupations which require the largest proportion of capital are the staple manufactures, transportation, merchandising, and the renting of buildings.

In the ruder ages, the poor have little to spare from the purchase of food and of the coarsest objects, and the rich are few in number and are inclined to spend on ostentation; for both reasons desire, then, favors the demand for a large amount of labor in proportion to auxiliary capital. As civilization advances and wealth accumulates, the poor acquire better homes and use many manufactured articles, and articles into whose price the cost of transportation enters largely; the tastes and habits of the rich themselves grow less ostentatious, even though more luxurious; and the great middle class arises, which is the chief consumer of manufactured articles. These influences combine to favor an increase in the demand for the use of auxiliary capital compared with the demand for labor.*

I have spoken thus far as though desire were guided by appetite alone, and as though under that guidance it occasioned an undeviating demand for certain commodities and for a certain definite amount of labor and of

* The manner in which the national revenue is distributed also affects the manner of its expenditure, so as to accord with the desires of the classes which have the spending of it. An unequal division of national revenue gives rise to a far different set of industries from what its equal distribution would do, and in some degree no doubt influences the relative demand for labor and for auxiliary capital.

auxiliary capital. If it were really so inflexible, a desire for articles into whose production auxiliary capital largely entered would not only throw laborers out of work and disturb the rates of interest and of wages, but, desire being unaffected by price, no fall in wages would enable the unemployed laborers to obtain employment, and no rise in the interest exacted would curtail the use of capital for other than remunerative purposes. The only limit to the fall of wages would be such as might be imposed by the refusal of the laborer to work for less than what would support life. In the reverse case, there would be no limit to the fall of interest until it reached a point so low that the owners of capital would withdraw it from productive use.

That these things do not occur is partly due to the fact that the same articles can be produced and the same desires can be gratified in various ways, affording manifold opportunities to substitute labor and auxiliary capital for each other whenever variations occur in the prices asked for their use; but it is also partly due to the fact that desire itself varies when the cost of its objects varies. For the very purpose of obtaining the amplest gratification for its own appetites, desire must take cognizance of cost; and the prices of using labor and auxiliary capital would still react upon the demand for them, although there should never be an opportunity to substitute the one for the other. The increment of production is never liberal enough to afford every gratification, and therefore cheapness must be considered in weighing one appetite against another and in choosing between them.

This influence of cost upon the effective desire for different commodities varies very greatly. As before said, the price of food will scarcely affect the desire of a starving man for so much of it as is needed to keep him alive, unless, indeed, that price should exceed his whole means. Nor when he has enough food will any change of price

induce him to buy much more. However low the price of delicacies, such as oysters and pineapples, he will not buy them until he has provided himself with necessities and comforts. When that has been done, his demand for them will be very greatly affected by their price.

As between industries which appeal to the same appetites, the influence of cheapness is paramount; but, as the natures of the appetites diverge more and more, the influence of cheapness wanes. Under no circumstance, however, does it absolutely disappear. It is greatest in choice between industries which produce very similar commodities, or commodities which minister to similar desires. To choose between beet sugar and cane sugar or between heating by gas or by coal or between lighting by gas or by electricity is virtually choosing between different methods of the same industry. The resemblance between another class of commodities is a step more remote, as with tea and coffee, wine and liquor, bread and meat, woollens, cottons, and silks. With increasing divergency of desires, the influence of cheapness wanes little by little. It is still potent in the choice between pasturage and tillage or between good dwellings and good clothes on the one hand and abundant or delicate food on the other. Even where its influence falls off, it never disappears entirely. The biography of many a scholar shows that it affects to some degree the decision between such very different desires as the love of learning and the fondness for good and sufficient food.

As between different appetites, the influence of cheapness is great where the appetites are about equally urgent and stand near together in the order of the succession of desires. But its influence depends not only on the degree of difference of different appetites: it depends also upon their strength. It greatly affects the distribution of expenditure between the appetites for the finer and more elaborate commodities, but it affects much less the rela-

tive amount of outlay upon the various objects of the coarser appetites.

VI.

Nature, art, and desire constitute the elements of the relative demands for the use of labor and for the use of capital, in so far as the demand is independent of the amount of the supply. The entire effective demand must always be satisfied, and its amount must be just equal to that of the supply. When this is so, the whole supply is also employed. The influence of price upon demand brings this about. Now, in what way does the amount of the supply affect the demand? Simply thus. The amount of the effective demand is different for every different price; and, whatever the supply may be, there is some price at which demand will absorb it. Whether this shall be a high price or a low price depends upon the character of the demand. On the other hand, when the character of the demand is known, the price depends upon the amount of the supply.

The fact that we are dealing here with the relative demands and supplies of different things complicates the problem. Let us therefore examine the case more closely. Labor and auxiliary capital being the sole agents whereby nature is made productive, the various industries are parcelled out between them in such manner that each shall be used where it is most effective. The more abundant either of them is, the more occupations fall to its lot. If either labor or capital is scarce, the demand for it will be keen; and those who have it for hire — laborers or capitalists, as the case may be — will exact a correspondingly high compensation for its use. Employers will be unable to afford to use it, except where its superiority is greatest, and where, therefore, a small amount of it will supplant a great amount of the other. As it becomes more abundant, its hire falls and its uses constantly spread. Thus it gradually intrudes itself into one opera-

tion after another; but, in each new operation of which it assumes possession, its advantages are less than in those which it already controlled. An ever-increasing amount of it is required, however, in order to supplant an ever-decreasing amount of the other; and the hire of this increased amount must still be always equal to the hire of the decreasing portion of the other. The fall in the price paid for using it is, however, checked by new demands, which absorb the new supply; and this happens more or less rapidly according to the promptness and the extent with which new uses present themselves.

If capital should accumulate while the supply of labor remains unchanged, it would usurp one after another of the various occupations of labor. But its doing so would still be a benefit to those who live by labor, because the price of a given amount of labor would equal the interest on an ever-increasing amount of capital. The gross amount paid in wages would probably * bear a less proportion to that paid as interest on capital; but, at the same time, the rate of wages would certainly rise and the rate of interest would fall. Now, where or at what level, will a new equilibrium in price and in supply and demand be found?

Employers, while carrying on the same operations as before, find that they have still a surplus of capital undisposed of; and their first impulse is to employ this surplus in extending the old industries on the old methods. But, finding no laborers waiting for the new places, they are compelled to fill a portion of the places by enticing laborers from other employments by the offer of higher wages. The work of the vacant places, both in the old

* I say probably, because it is conceivable that the whole of the increased amount of capital should receive a less sum than the smaller amount had done. This would occur if, in order to open avenues of employment for it in supplanting labor or in new industries, it were necessary that the fall in the rate of interest should be greater than the increase in the amount of capital. This, however, is unlikely ever to occur.

and in the new employments, must needs be done by means of auxiliary capital. The question is to find how much wages rise and how much interest falls; or, in other words, how much the amount of auxiliary capital needed to supplant a given amount of labor on the new level of equilibrium exceeds that required on the old level, and how much the rate of its compensation falls. This depends upon the character and the extent of the operations on and about the former line of interchange, or indifferent use of capital and labor. If there were formerly large numbers of laborers employed whose work could be accomplished at equal cost by auxiliary capital, these laborers may possibly suffice to carry on the new employments, while a part of the new capital flows in to take their places. In this case, wages and interest would not change. If there had been large numbers of operations done by labor which could have been done by capital at small additional cost, wages would rise and interest would fall but little. If such operations were few; if, in order to liberate enough laborers for the new operations, it should be necessary for capital to supplant them in operations where formerly the advantage of labor was great,—then wages would advance greatly, and interest would fall in a like degree. In any event, a greater amount of capital would be needed to supplant a given amount of labor at the new line of interchange than at the old line; and, although a less rate of interest would be paid on it, the total interest payment would be greater.

The price of a given amount of labor under the new adjustment of industries would be equal to the interest on the amount of capital which is but just able to supplant it at the new rate of interchange, just as the former price of labor was equal to the interest on the amount of capital formerly required to supplant it at the old rate of interchange: the change in the price of labor would be the difference between the interest payments.

We have spoken above of the effects which follow when capital increases at a more rapid rate than labor, and this has been the ordinary course of the industrial progress of the past half-century. Were this, however, to be reversed, and were the supply of labor to increase faster than capital, then the results would also be reversed,—the rate of wages would fall, the rate of interest would rise, and the extent of the change would be governed by considerations similar to those which prevail when capital increases. The fall in the price of labor would continue until new ways could be found for it to supplant auxiliary capital. The aggregate payments in wages would probably be greatly enhanced, although it is conceivable that such might not be the case, but that the fall in the rate of wages would be greater than the increase in the amount of labor.

In an enterprising age, the very activity and inventiveness which lead to an increase of capital afford also a field for its employment. Vast as have been the accumulations of capital in the last century, the new industries which have been opened up, and the inventions of machinery which have been made, have readily absorbed the entire accumulations; and it is probable that, even in the older countries, the rate of interest is no lower to-day than it was one hundred years ago, if, indeed, it be so low.

In a more conservative age, where the methods of production are stereotyped and opportunities for expansion are not found, or, being found, are not used, the increase of capital is slow and difficult. And yet, slow as it is, the gradual and moderate accumulations which are there made do, if new uses are not found for them, continually beat down the rate of interest until a point is at last reached where accumulation ceases. Practically, this occurs when the interest falls so low that people will not save; and this point may be reached somewhat on this side of the absolute limit beyond which the increase

of capital would be theoretically impossible. Such absolute limit to the increase of capital would be attained when its amount should be at the maximum which can be usefully employed in connection with the existing supply of labor in the existing state of nature and art. Should the supply of capital exceed this amount, wages would then rise under the competition for labor until interest disappeared and capital refused to enter into industrial employment, and was hoarded or consumed unproductively. The ultimate limit of the supply of labor, on the other hand, would be reached if the number of laborers should increase up to the possibility of employment. Were there an excess of labor beyond this, the competition for employment would be so keen that it would drive wages down until they reached a point where laborers would refuse to work, and would throw themselves on charity, or prefer, if they must starve, to starve in idleness.

VII.

We may now briefly summarize as follows the separate influences which, taken together, determine the price of labor and the rate of interest.

The Rate of Wages, or the Price of using Labor, and the Rate of Interest, or the Price of using Capital, depend upon the productiveness of industry, and upon the manner in which its proceeds are divided.

The degree of productiveness of industry depends upon the bounty of Nature and upon man's knowledge and skill in turning to account the resources which she affords. Its advantages are shared by capital and labor alike.

The proportion in which the product shall be divided between labor and capital (or, in other words, the ratio between wages and interest) depends: first, upon the relative demand for them; and, second, upon their relative supplies.

By the relative demand for labor and capital, I mean the degree of eagerness with which each of them respectively is sought after by effective human desire acting within the limitations imposed by the existing conditions of nature and art. Nature and art designate what industries and what methods are possible, and fix likewise the proportions of labor and of capital needed in each of them. At different times and places, they offer different sets of operations, and each of these sets of operations differs from any other set in the amounts of labor and of capital required. Thus nature and art favor the use of labor or of capital, as the case may be, and stimulate the demand for the one so favored.

But, among the operations which are offered at any one time and place, whether operations which produce different commodities or operations which are merely different methods of producing the same commodities, there is an almost infinite variety in the proportions of labor and of capital required. Desire chooses from among them those which shall actually prevail. It may select those which require more labor or those which require more capital. Thus its action determines the demand.

Desire is guided by appetite, but it is also subject to the influence of price. Its action is not finally determined until the price is known, but the price itself cannot be known until the demand is ascertained. What appears one moment as cause appears therefore the next moment as effect.

Did the result of our investigation stop here, its scope would scarcely exceed that of a more careful analysis than has usually been made of the nature of the demand for labor.

We should still be confronted by the counterplay of cause and effect, wherein price appears at one moment as an element of demand, and a moment later demand figures as a cause of price. Until this difficulty is solved, there

can be no complete and satisfactory statement of the law of wages. Its solution involves the discovery of some condition whose existence will insure stability and equilibrium in demand and in price. I stated in my former paper the condition which I believe fulfils this requirement. This condition is realized whenever the whole of the supplies of labor and of capital are employed; and the different industrial functions are distributed between them in such manner that each is engaged, so far as the supply of it will reach, in those branches of work for which its fitness is relatively greatest in the existing circumstances of nature, art, and human desire or appetite. When these circumstances are known, it is easy to answer the question where the line of demarcation between the employments of labor and of capital shall be. It depends upon their respective supplies. At that line such amounts of them as are there able to do the same work are interchangeable. These receive the same price, and the same price will also be paid for like amounts of them in any of their other uses.

This statement of the condition of equilibrium of price and of demand I have ventured to designate as the Law of Wages. It is also the Law of Interest. I believe that embraces all the various influences which affect the market rates both of wages and of interest.

STUART WOOD.

THE INTERNATIONAL PROTECTION OF WORKMEN.

THE principle of concerted international action in matters touching the common economic interests of the States of the commercial world is a well-established expedient of modern diplomacy. The customs union, postal union, and monetary union are familiar examples of uniform commercial arrangements between nations. However, these are regulations affecting the nations concerned principally in their external relations: we have yet to see the principle extended to the common settlement of questions deeply influencing the internal constitution of society. Nevertheless, the proposition of bringing about some arrangement between the leading industrial nations, looking to the adoption of a uniform system of labor legislation for the protection of workmen, has been put forth with frequency and enthusiasm during the past ten years. The suggestion, moreover, describes a phase in the treatment of social questions quite characteristic of the present turn of thought, which attempts to work out its problems on existing lines and with existing resources, and to effect an improvement of society without first destroying it. One of the most recent, complete, and thorough-going discussions of this subject comes from Dr. Georg Adler of the University of Freiburg.* For the benefit of those to whom the original monograph is not accessible, a *résumé* of its more important parts is herewith presented.

Dr. Adler divides his monograph into ten sections, the first seven of which are devoted to the development of the theory of international labor protection. Each section being devoted to the establishment of a particular thesis bearing upon the general theory, the first section is intended to establish the necessity of some kind of legislative intervention for the pro-

* Dr. Adler's monograph appeared originally in the *Annalen des Deutschen Reichs* for July, 1900. It was subsequently reprinted and published under the title of *Die Frage des internationalen Arbeiterschutzes. Nebst einer Kritik der Ansicht Gustav Cohn, von Dr. Georg Adler*. 1900. Munich and Leipzig: G. Hirth. 8vo. pp. 112.

tection of industrial workmen. It must be admitted, according to our author, that the industrial organization of modern society, on the basis of its ruling principle,—the complete freedom of production,—in so far as the State has not intervened to protect the laborer, leads to a gloomy deterioration of the standard of life of the working classes. The present is an era of “capitalistic production” and unrestrained competition; and, in the play of its various forces, it is inevitable that the motive of self-interest should dominate the economic activities of men. “The force of self-interest is so strong,” says our author, “that, if the individual be allowed to yield to it with impunity, he will actually surrender himself chiefly to its guidance.” Under the impulse of this irresistible motive, it has been the great aim of modern industry to produce at the lowest possible cost; to purchase the instruments and materials of production as cheaply as possible, in order to realize the greatest earnings. Among the commodities which the capitalist must purchase for his undertaking is the commodity labor. Here, as elsewhere, his interest impels him to purchase the greatest possible quantity at the least possible price,—in other words, to secure the greatest amount of work for the lowest wages. Such a proceeding is indeed harsh and unmerciful towards our fellow-creatures, but it is found to be the certain outgrowth of existing conditions. Humane considerations are seen to be lost sight of in the presence of the unrestrained operation of self-interest.

It has thus come to pass, at times when the State has not intervened for the protection of the workman, that tendencies have been developed hurtful and hostile to the working classes. These injurious tendencies Dr. Adler enumerates under the nine following heads: 1. The introduction of the regular factory work of children; 2. Regular factory work of women; 3. The often extraordinarily long duration of the working day of labor in general; 4. The often excessively low rate of wages of unskilled labor; 5. An occasional lack of employment and consequent loss of wages for laborers who are both able and willing to work; 6. Temporary or permanent disability and loss of earning power by laborers meeting with accidents in the course of their work, without being able

to fasten the responsibility for their injuries upon their employers; 7. A similar disability and privation for workmen taken sick, unless, as seldom happens, they chance to be members of an aid society; 8. Permanent disability and want befalling workmen in consequence of old age or disease, obliging them to resort to public charities for scant subsistence; 9. Wretched and unhealthy housing of the working class, although constituting a considerable charge upon their wages.

Dr. Adler proceeds to demonstrate, in a manner quite familiar to readers of Karl Marx, the existence and extent of these tendencies, so hostile to the well-being of labor. Each step of the discussion is strongly re-enforced by a rich mass of statistical matter gathered from a wide and varied field. We cannot stop to follow each turn of the argument, however interesting and instructive. It all centres around the unhappy social conditions which, from the very nature of things, have accompanied the unhindered sway of self-interest acting under modern industrial conditions. Here is a typical example:—

The introduction of the systematic employment of women and children in industrial operations has been made possible by the wonderful development of machinery and of the division of labor. There was then, for the first time, a mass of work at once light and simple, and requiring regular attention, that could be intrusted to the feeble hands of women and children. Out of the *possibility* of the application of the labor of women and children was necessarily developed the *actuality* of such an application, since the capitalist would find it more profitable to employ the cheaper labor of women and children instead of adult male laborers. And the parents of children also had an interest in availing themselves of this opportunity, by the prospect thus held out of increasing their income.

And, since the interest of the employer thus induced him to make the utmost use of the cheap labor forces of women and children, there was furthermore developed the tendency towards lengthening the working day of those individuals.

In this way, the necessity of the factory work of women and children in the industrial economy of the present day — as long as the State does not concern itself with social matters — may be theoretically deduced. That the facts correspond with the theory is but too well known. Nothing further needs to be said about English, French, and Belgian experiences. It has been definitely settled that many children as young as eight and ten years are steadily occupied at regular factory work for twelve hours and more; that married women are engaged at the most

cause, "in consequence of the prolongation of the working day, the time required for the production of a given quantity of commodities is shortened, so that profits are also returned in a shorter term, or, what amounts to the same, the earnings for the same period are greater."

This tendency, which is always potent in normal times, is much intensified in the times of commercial and industrial expansion which ordinarily precede a commercial crisis; and it is during such seasons particularly that laborers are induced to forego opposition to a change of working hours by the offer of a more liberal compensation for the extra time. "But," observes Dr. Adler, "as soon as bad times follow, wages are often reduced, while the longer hours remain, so that, as a permanent result, we find a deterioration of the position of the laborer." It is hardly necessary to add that an inordinately long working day will be attended with evil consequences to the health and well-being of the laborer.

Dr. Adler issues from his examination of the characteristic tendencies of the modern industrial economy with the conclusion that, as long as the State does not intervene, it will lead to the unlimited exploitation of the labor-power of men, women, and children, and that a change can be effected only by means of regulative legislation. That legal limitations can be so administered as to attain their purpose, the improvement of the condition of the working classes, is entirely apparent from the example of England.

Nearly every considerable industrial nation has found itself obliged, by force of circumstances, to do something towards mitigating the evils and sufferings that oppress the working classes. But no one country has yet attempted to apply all the regulations necessary for the effective protection of labor; and, what is more, only a part of them has anywhere been seriously agitated. Still, serious difficulties and violent opposition have been encountered in what has thus far been attempted. Nor have these difficulties been confined to the stout resistance of the manufacturers to protective labor legislation, for such opposition is to be expected in the case of any innovation at all prejudicing the interests of capital; but there are difficulties of another sort, such as are grounded in the nature and

or impracticable. It will rather depend upon the character of the proposed legislation and the charges thereby imposed upon the employer.

We observe among the charges, which are imposed by laws passed in the interest of labor, one very special kind in particular; namely, such as, measured by their magnitude, are *narrowly limited* charges. If, for example, compulsory workmen's insurance against sickness should be introduced, and employers should be obliged to pay, in proportion to the number of their workmen, one-third of all expenses, such a charge would be a narrowly limited one. The expenses of sick insurance are so small that the employer (manufacturer or master mechanic) would need to expend only a few marks a year for each of his workmen. But, if the manufacturer does not reimburse himself for this additional cost, his earnings will be diminished by the full amount thereof. Even in this most unfavorable case, however, the manufacturer's misfortune is not great, since his earnings suffer but a slight diminution. There is, therefore, no occasion to pity the manufacturer; still less need we fear that such an insignificant difference between domestic and foreign profits could have an at all deciding influence upon the competing ability of domestic industry.

Similarly, for example, a law prohibiting the employment of children under twelve years of age in manufacturing is such as imposes only narrowly limited charges upon the employer. If the employment of women and children over twelve years of age is allowed, the employer has as large a supply of the cheapest labor-power as he can desire. The quantity of available labor-power, and, consequently, the amount of profit to be made therefrom, is diminished by but a small fragment. Therefore, in this case, also, the possible reduction of the profits of the manufacturer or master is kept within narrow limits.

The conclusion to be drawn from this is that, *protective labor laws, which impose narrowly limited charges upon the employer, may be very properly administered on a national basis without any appreciable injury to the economic interests of the nation.*

Dr. Adler holds laws on compulsory workmen's insurance, providing for the contingencies of accident, sickness, old age, and permanent disability, orphanhood, and widowhood, as also laws prohibiting the employment of children under twelve years and women *except*, to be regulations well adapted to national administration. They would create only slight charges upon the employer. The average cost to employers in Germany of workmen's sick insurance is estimated by Dr. Adler not to reach the sum of four marks a year for every workman coming within the scope of the legislative provision. And, although it is unlikely that the producer can reimburse

himself for this deduction from his earnings by increased prices, nevertheless the amount is so insignificant that it hardly demands serious, much less sympathetic, attention. Our author is not disposed to deny that a number of such charges taken together might, in some cases, become so serious as to prejudice the well-being of domestic industry; but he does not believe that it will be attended with such consequences in Germany, the only country in which the various forms of workmen's insurance are likely to be soon realized. And he reminds those reformers who are striving to remove or even only to mitigate social evils, without placing a part of the burden upon interest and profits, that they are guilty of applying to social conditions the maxim, "Wasch' mir den Pelz, aber mach' mich nicht nass."

Continuing, Dr. Adler next examines the second sort of impediments in the way of a comprehensive system of national labor legislation, and in this connection approaches the question suggested above. He reasons as follows:—

In addition to the first kind of protective labor laws, which are accompanied by narrowly limited charges upon employers, there are also laws which, if carried out in a *single* country, might under circumstances seriously damage many enterprises, be it by a substantial diminution of their earnings or by removing the prospect of chance gains (*Konjuncturengewinne*).

Let us take, for example, a law which entirely prohibits the industrial employment of children, and which restricts the working day of women to ten hours, in a certain country. Employers would be very much cut off from utilizing precisely the cheapest labor-power by such a law. On the other hand, competing industrial countries, in which no such laws prevailed, would make the greatest possible use of the extremely cheap labor of women and children, in consequence of which the cost of production of foreign-made commodities would, *ceteris paribus*, be much less than that of those produced at home under the protective labor laws. As soon, therefore, as a contest arose for the acquisition of a new market, foreign-made goods would be supplied more cheaply than domestic goods (since the former, by reason of their lower cost of production, would yield a satisfactory profit, even at a price lower than that of the domestic goods). Accordingly, all newly opened markets would be won abroad, the home producer not being able to compete with his foreign rivals at the lower prices. An exception would have to be made only in those cases in which the home producer had some advantage over the foreigner in the *other* elements of production (as cheaper raw materials, better

quality of materials, special skill of workmen, lower cost of transportation from the place of production to the place of sale). But even the maintenance of their old markets would be a difficult task for the domestic manufacturers burdened with an efficacious labor protection, wherever they worked under conditions, *in other respects*, the same with foreign industry. Domestic industry, in order to retain its markets, would have to sell at as low prices as foreigners, the consequence of which would be a general and serious fall of the profits of domestic industry. And there would follow: first, an emigration of loan capital, in the hope of receiving more interest abroad; second, manufacturers would rather establish factories abroad, where they could manufacture at a lower cost; and, third, the poorly situated class of domestic enterprises—that were just able to keep above water under the earlier, better prices—would be ruined and compelled to go out of business.

But, further, a system of far-reaching protective labor legislation operating in the way described, if carried out only in our country, while other nations quietly looked on, might very considerably diminish our chance gains during a season of great industrial expansion. At such a crisis, it pays to make the most of the momentary temper of the market by throwing the greatest possible amount of commodities upon it. But, if the domestic producer is not allowed to employ children at all, and is allowed to employ women only to a limited extent, he is prevented from producing as much as he might wish. He is, therefore, compelled to let the opportunity of reaping exceptionally high profits slip away partly unavailed of; and, if the season of activity in trade is followed by one of depression, the previous production having been too extravagantly increased, and having far outrun the demand, the domestic manufacturer will suffer from the fall of prices almost the same as the foreigner.

It thus becomes apparent how hazardous any purely national proceeding is in the case of the second sort of protective labor legislation. We are, accordingly, necessarily forced to demand that the protection of workmen shall be carried out on an *international* scale, by having the various countries with a developed industry act in concert.

Having examined the theoretical grounds of the weakness and insufficiency of national labor legislation, Dr. Adler next inquires how the facts agree with the theory; and here he makes his principal appeal to the example of England. Of all European workmen, the Englishman is the best provided. He has the shortest working day and gets the highest wages. So much better is his condition than that of his continental brethren that the cost of labor to an English manufacturer is far higher than the corresponding expense to his continental competitor. And these improvements in the condition of the

tion that explains why it is that the shorter hours and greater wages of the English workman are just now beginning to be felt as important factors in determining the future strength of English industry. However, Dr. Adler thinks that the same condition would have resulted even if English legislation had not done what it did to protect labor. This legislation saved English labor from the degeneration, misery, stupidity, and brutalization towards which it was rapidly declining in the early decades of this century, and thus exercised a powerful influence in preserving its superior efficiency, and, consequently, in maintaining the competing ability of English industry. The factory legislation may have anticipated and accelerated the advent of the inevitable crisis when England would have to contend with the competition of foreign rivals, but it certainly did not produce it. As it is, this point has been reached without the sacrifice of the English laborer.

Dr. Adler makes a similar examination of the industrial situation of the leading commercial nations of continental Europe, showing how each in its own turn is threatened by the competition of those of its neighbors who have done the least for the protection of labor. He lays especial emphasis upon the example of Belgium, the flower of whose industry has been attained by the indescribable suffering and sacrifice of the masses.

On the other hand, it appears that the social salvation of the working class cannot be achieved otherwise than at the expense of the prosperity of the national industry, by any country acting alone. And national feeling is so sensitive in all matters relating to national prosperity that the progress of much legislation that is undoubtedly attended with far more good than damage, is almost completely retarded. Any proposition for the social amelioration of the condition of the working class that carries with it the least suspicion of jeopardizing the national industries will encounter formidable opposition, even among the friends of labor. National vanity and national solicitude are seldom appealed to in vain.

The method proposed by our author for escaping from this difficulty is to have all the important industrial nations adopt a common, uniform system of protective labor legislation. In

this way, local opposition would be silenced; and such legislation could be more far-reaching and effective, and would finally inflict no appreciable injury upon national industry. Indeed, Dr. Adler thinks that, unless some steps are taken towards realizing the plan of an international union, not only will the progress of labor legislation be very slow in each separate country, in consequence of the ever-increasing intensity of international competition, but, more than this, that what has already been accomplished will be put in question. And he cites the carefully worked out conclusion of Professor Nasse, to the effect that, within the near future, a pressure will be exerted to lower wages in England until they approach, in some degree, those of Continental Europe. Professor Nasse even goes so far as to think that the process has already begun.

Dr. Adler points out a further and very important tendency of international labor legislation, as a means for mitigating the severity of industrial crises. Overspeculation and overproduction are the symptoms of industrial expansion and the causes of commercial revulsions. Now, if some means could be devised for checking or preventing overproduction, one of the necessary conditions to industrial expansion would be taken away. And Dr. Adler maintains that his proposed international legislation would have the desired effect by limiting the maximum working day, prohibiting night work, and the like. Production could then be increased to any considerable extent only by the employment of more workmen and extension of plant; in a word, by an increased outlay of capital. And this, we have already seen, is a very costly and, consequently, unlikely proceeding. Such serious obstacles would be thrown in the way of a ready compliance with an abnormal and temporary demand for increased production that the momentary temper of the market would probably soon subside for lack of sustentation. Fewer commodities being produced than demanded, the market would be less likely to be heavily stocked, and prices would be more likely to maintain their equilibrium. This remedy can hardly be claimed to strike at the root of the evil attacked, but it at least promises a means of applying brakes to the wheels of industry just

when it is all-important that they should not travel beyond their normal speed. Dr. Adler's suggestion is certainly worthy of further study by those who have been disposed to look upon the regular recurrence of commercial crises as an evil fixed in the nature of the modern business world.

Such are, in brief, the principal reasons by which Dr. Adler urges the necessity and importance of establishing an international union for the protection of workmen. And, in closing this part of his study, he is careful to point out what he considers the proper subject-matter for international administration. Not all labor legislation, but only that which imposes considerable charges and restrictions upon industry, should be carried out upon an international scale. This distinction has already been indicated above in Dr. Adler's own language. He especially cautions reformers against being over-zealous and hasty, and advises them to keep close to tried or known expedients. No proposal that has failed to attract the unanimous support of scientific men interested in the work of social reform, and of the immediately concerned working class, can be regarded as a fit subject for international negotiation or discussion. Consequently, such questions as a legal minimum of wages and dwelling-house reform must be shelved for the present. They have not yet experienced a complete scientific examination or solution. The more that is asked, the more opposition will be encountered; and a single fallacious or misjudged step may postpone needed reform for years. Accordingly, the immediate object of a uniform system of international labor protection must be the regulation of such matters as the prohibition of the industrial employment of children under thirteen years; a general maximum working day of ten hours in factories and workshops; prohibition of night work and Sunday work, except where the nature of the work or public convenience requires otherwise; "half-time" for young persons between the ages of thirteen and sixteen years and also for married women; prohibition of the employment of young persons and women in occupations dangerous to health or morality; a maximum working day of ten hours for all young persons of the ages of thirteen to eighteen years engaged in domestic industries; prohibition of certain methods

of manufacture dangerous to health. It is hardly necessary to state that Dr. Adler would not have these innovations introduced all at once. The process would have to be gradual, so as to produce as little dislocation and suffering as the nature of the change would permit.

Modest as this programme of reform would seem, and however well founded the necessity of international labor protection appears, several German economists—notably Professors Cohn and Brentano—have taken exception to it. A separate section of Dr. Adler's monograph is given to a consideration of Cohn's objections, which must be briefly noticed. The gist of Professor Cohn's reasoning may be stated as follows: All labor legislation, in so far as it does not keep in close touch with the actual, though it may be deplorable, condition of the working classes, will seriously prejudice the laborer's interest by diminishing his income, and will therefore prove impracticable. Factory laws strike not only the manufacturer, but also the workman and his family, who, in obedience to the great natural law that mankind will live wretchedly rather than not at all, have accommodated themselves to their miserable circumstances. It follows that the labor legislation of every country must be in strictest accord with its economic and social situation. But, as economic and social conditions vary from country to country, it is clear that each nation must have its own special and peculiar system of labor legislation. A common system of international labor protection is, therefore, out of the question.

According to Professor Cohn, the opposition would come, strange to say, not from the employing class, but from the working class, who would be unable to bear a diminution of their income. Dr. Adler allows that labor legislation would involve some reduction of earnings. But, granting this point, he asks why it should make the contemplated legislation impossible. Have not the frequent and distressing commercial crises of the modern world been attended with great reductions of wages as well as with other consequences far more detrimental to the interests of labor? The world did not get out of joint then. Why, therefore, should protective laws that, at the worst, would produce infinitely less mischief be re-

garded as impracticable, especially when the alleged fall of wages would be compensated for by important gains of another kind, not unwelcome to the laborer? But, after all, the diminution of the income of labor would be trifling and temporary. For, the factory work of children being prohibited and limitations being placed upon the employment of adults, the demand for laborers would increase and wages would rise, even though not entirely sufficient to cover the previous reduction. And employment would also be found for the many who are out of work, even in normal times, and earn no wages at all. Furthermore, the reduction of wages would be but temporary; for the workman's family would have to gradually accommodate itself to its diminished income. If, as Cohn argues, the allowance of the factory employment of children stimulates the increase of the family, then its prohibition must operate as a check upon the undue growth of the family, and lessen the number to be provided for. The standard of living would thus be gradually raised. It must also be remembered, as has already been pointed out, that without international protection wages will have to fall in England, as also in the great exporting States of the Continent.

Professor Cohn next objects to international labor legislation, on the score of its impracticability. With the experiences of individual States in the administration of their factory legislation before us, can we bring ourselves to believe, asks Professor Cohn, that an international labor law would be everywhere uniformly administered? When we examine what numerous difficulties the administration of the Swiss factory act of 1877 has had to encounter as between the separate cantons, we can realize the futility of expecting that an international factory legislation would be uniformly administered in different countries, with great diversity in the machinery of government, and with far greater diversity in the situation of the working class than could possibly exist between portions of the same country.

To this objection, Dr. Adler replies that the present defects in the administration of factory legislation are due precisely to the absence of a common international system. The one insurmountable obstacle in the way of an effective national

factory legislation — namely, the impairment of national industry — would be removed by a uniform international labor legislation. Cohn is, therefore, guilty of reasoning in a vicious circle when he makes approval of international legislation dependent upon the success of a purely national system: whereas, in reality, an international proceeding is the necessary presupposition of a national labor legislation that shall not prove burdensome to the employing class.

And it is also this same consideration that gives Dr. Adler so much faith in the future realization of some form of international labor protection. According to his thought, it is the only way out of much of our present social evil and discontent. And he believes it will succeed, because it must succeed. Something must be done, for the tendency of unregulated capitalistic production is to sink the proletariat into a degraded and untenable position. The alternative is clearly presented: either the decline of modern civilization, if the State continues to pursue the principle of *laissez-faire*, or else an energetic social reform, embracing international labor protection, whereby mankind will gradually attain to higher culture and civilization. It is not the enthusiastic theorist who discovers this alternative, but the natural process of society, which will compel mankind to take the one or the other course. It cannot be doubted, however, which road will be chosen: ceaseless agitation to save the masses from social degradation, combined with the ever-tightening pressure of national competition, unmistakably point to international labor legislation as the necessary escape from degeneration. And it is, furthermore, argues Dr. Adler, the necessity of this remedy that will be the greatest surety for its vigilant enforcement and administration, when adopted. Nations will observe such an obligation, because it will be for their interest, and because public opinion would not tolerate its violation. When public opinion is once won for the needed reform,—and Dr. Adler presents a large mass of facts to show that the drift is in this direction,—means will not be wanting, he thinks, to insure an effective international co-operation for the accomplishment of this purpose. Where there is a will, there is a way.

A. C. MILLER.

NOTES AND MEMORANDA.

THE *Giornale degli Economisti* of Bologna announces a new periodical, the *Credito e Cooperazione*, to be published as the organ of the Italian popular banks. The announcement, which is signed by Professor Luzzatti and Dr. Zorli, gives notice that the new publication can be obtained by subscribers to the *Giornale* by an additional payment of three lire.

THE German bill for the compulsory insurance of workmen against old age and permanent disability, of which some account was given in the last issue of this *Journal*, became law in May. The salient features of the act as it now stands on the statute-book are, as already described: graded premiums and benefits; an organization distinct from that for sickness or accident; and fairly liberal provisions for the insured.

PROFESSOR L. BRENTANO, who left Strassburg for Vienna in the spring of 1888, has now accepted a call to Leipzig, where he becomes Professor of Political Economy and Finance. His place at Vienna is taken by Professor A. v. Miaskowski, hitherto at Breslau. We note also that Dr. R. v. Kaufmann, who has been *Docent* at Berlin, becomes Professor of Political Economy at the Royal School of Technology in Charlottenburg, and that Dr. J. Wolff, professor extraordinary at the University of Zürich, has been made professor in ordinary at that institution.

GUSTAV FISCHER, Jena, announces the publication of a *Handwörterbuch der Staatswissenschaften*, edited by Professors Conrad, Lexis, Elster, and Loening. The prospectus

reader must bear in mind how little of the iron counted under anthracite is now made with that fuel alone. The figures indicate thousands of net tons.

Pig iron made in the United States with

	<i>Anthracite and mixed coke and anthracite.</i>	<i>Bituminous (coke).</i>
1870	930	570
1872	1,370	984
1874	1,302	910
1876	794	300
1878	1,098	1,191
1880	1,808	1,950
1881	1,734	2,368
1882	2,042	2,488
1883	1,885	2,690
1884	1,586	2,845
1885	1,454	2,676
1886	2,100	2,806
1887	2,538	4,371
1888	1,925	4,744

The report further tells us that in Maryland, which was on the list of anthracite-using States up to 1885, only bituminous iron is now made, and that "three large furnaces, in Berks and Lebanon Counties, in the Schuylkill and Lower Susquehanna Valleys, and on the edge of the anthracite coal fields, ran wholly on coke in 1888."

Coke is, on the whole, a better fuel for smelting iron than anthracite. Moreover, bituminous coal can be got in practically unlimited quantity; and the process of converting it into coke has been much improved and cheapened in recent years. Anthracite, on the other hand, is found only in one narrow field, is limited in quantity, and is in steady and active demand along the seaboard for domestic use and miscellaneous manufacturing. Coke has consequently fallen in price as compared with anthracite, and the tendency to give up the latter in iron-making has been inevitable. The history of iron-making leads us to expect that here, as in other countries, the ore will move to the fuel, and not the fuel to the ore. The bulk of the iron of the United States is already made in the interior. The displacement of anthracite may be expected to give the districts near the seaboard in the future even a less important part in the iron industry than they now take.

MR. WICKSTEED'S NOTES UPON JEVONS.

Mr. Wicksteed's interesting paper * on Jevons's *Theory of Political Economy* deserves the attentive study of all who believe in the possibility of a quantitative form of the science. Mr. Wicksteed gives us not so much a criticism of Jevons as an alternative method. This new method, whether an improvement or not, is valuable as an illustration of the mutual relations of economic quantities. There are, however, two points on which Mr. Wicksteed directly challenges the older writer's views.

The first of these is the form of the curve of the price of wheat, which Jevons regards as asymptotal and Mr. Wicksteed as cutting both axes.† Mr. Wicksteed proposes to limit his curve to the prices of wheat considered as used for human food only. This limitation does not radically alter the problem, as the alternative uses at lower values only delay the approach of the curve to the axis, and do not prevent it reaching zero, if Mr. Wicksteed's views be correct.

There are other uncertainties in the data. Is the excessive supply supposed to be caused by an accidentally large yield or acreage, or by the discovery of a new, more prolific variety? Differences of this kind in the data would modify the form of the curve, but would not affect the main question whether or not it is asymptotal.

So long as a surplus of wheat in one season can be kept so as to reduce human labor in a future season, I do not see how its price can fall to zero. If the surplus be sufficient to render needless the raising of more wheat for twenty years, it will still have a value amounting to the present value of the deferred cost of wheat-raising in the twenty-first year after deducting the expenses of storing it. As to the other end of the curve, Mr. Wicksteed is no doubt right in saying that an infinite price is an impossibility. A price cannot actually be higher than the total amount of money owned by the richest

* *Quarterly Journal of Economics*, April, 1888, p. 203.

† *Ibid.*, p. 236.

buyer in the world. But, if we can say, and continue without limit to say, that, if the buyer were richer, the price would be higher, then we may say the curve is asymptotal.

Jevons supposes that a total deficiency of wheat could not be compensated by other foods. I doubt whether a total failure of one harvest would cause anything approaching the entire destruction of wheat-eating peoples; but several successive total failures might do so, if other food crops were not increased. As Mr. Wicksteed points out, the famine (i.e., death) point would soon be reached by the poorest people. In fact, this point is now reached by the disabled poor, whom the State alone prevents from starving. As the supply dwindled and the price advanced, the richer strata of society would be affected in succession. Finally, we must imagine, if the structure of society still existed, the last few bushels of wheat being competed for by a few surviving rich men, who would give all they possessed for the means of maintaining life until another harvest could be gathered.*

It is true, generally, that the curve of price of any article desirable to men, and requiring labor to produce, cannot be reduced to zero, provided it be not perishable. If it be perishable, the curve may soon reach zero, as is well illustrated in the case of fish. At Billingsgate, in London, if the supply of fish be excessive, the surplus is destroyed. By this means the price is prevented from dropping to zero. No one will buy more fish than he can eat before it decays. Up to the zero point, a declining price would increase demand; but, when every one frequenting the market has secured all he can consume while still eatable, no further demand can be created, even by offering the goods gratis. A fisherman's labor consists of voyages at stated intervals. Whether the catch be large or small, the labor is practically the same. He therefore looks solely at the gross value of the day's produce. If the

*Scott illustrates an infinite price in the *Antiquary*, when Sir Arthur and Edie Ochiltree are standing on the rock watching the incoming tide.

"'Good man,' said Sir Arthur, 'can you think of nothing — of no help? I'll make you rich — I'll give you a farm — I'll' —

"'Our riches will soon be equal,' said the beggar, looking out upon the strife of the water. 'They are aye already; for I hae nae land, and you would give your fair bounds and barony for a square yard of rock that would be dry for twal hours.'"

Jevons's formulas represent the ratio of the increment of produce to the increment of time in a simple case; but they are equally applicable to the total investment existing at any one time, and they would then give the standard rate of interest.

T. E. JEVONS.

THE COST OF PRODUCTION OF CAPITAL.

In the *Kapital und Kapitalzins* of Professor Böhm-Bawerk* and in Professor Patten's article on "The Fundamental Idea of Capital,"† the theory of capital and interest has been advanced far beyond the stage of easy generalities. It can be no longer doubted that capital and interest have to be interpreted by profound economic relations that were not perceived, much less studied, when Mr. Mill wrote his chapter on "Fundamental Propositions." Yet the investigation is by no means finished. When it is affirmed or suggested that interest is altogether accounted for by the difference in value between two precisely similar goods, of which one is present and the other is future,‡ a doubt may arise. Granting that "the overwhelming majority of human beings set a higher subjective value on present than on future goods otherwise identical," and that "from such subjective valuations arise, in the general market, a higher objective value in exchange and higher price for present goods,"§ have we to attempt no further analysis?

Is not the problem more complex than even Professor Böhm-Bawerk has recognized? When we say that interest is due to a certain cause, just what do we mean? Do we affirm that the alleged causation explains how, by means of capital, a certain sum of wealth, called economic interest, may be produced,—wealth that could not be produced by labor without

* Reviewed by Mr. James Bonar in the *Quarterly Journal of Economics*, April 1899.

† *Quarterly Journal of Economics*, January, 1899.

‡ "The Positive Theory of Capital," *Quarterly Journal of Economics*, April, 1899, p. 342.

§ *Kapital und Kapitalzins*, II. 261, and *Quarterly Journal of Economics*, April, 1899, p. 341.

capital, a sum from which loan interest can be paid on borrowed capital, if necessary? When we regard interest from this point of view, we think of it as mathematically positive. It is a unique stream of wealth, drawn by means of capital from the bounty of nature.

Do we mean that the alleged causation explains why lenders think it right to ask and borrowers are willing, if necessary, to pay loan interest? From this point of view, interest is mathematically negative. The uppermost idea is that of cost. The borrower thinks of a cost that he must bear, the lender of a sacrifice for which he demands compensation.

Or, once more, do we mean that the alleged causation explains all the foregoing phenomena and, in addition, the fact that capital, in spite of its augmentation by economic interest, is in such limited supply that lenders are able to convert their desire for loan interest into an effective demand?

Obviously, we have here different though closely related problems.

Economic interest must be accounted for by a theory of productive instruments. When that theory is elaborated, it will be seen how important is the distinction recently made by Professor Clark between pure and concrete capital.* A productive instrument is capital combined with an invention. The earnings of the capital obey one law. The earnings of the invention obey a different law. Yet, apart from the other, neither capital nor invention would have any earnings, there would be no such thing as economic interest.

It is into the second problem that Professor Böhm-Bawerk has put his most satisfactory work. Given the fact of economic interest,—the fact, that is, that capital consumed in certain ways is reproduced not in mere equivalence, but with increment,—given also the fact that the supply of capital, notwithstanding its constant augmentation by economic interest, is limited, then the payment of loan interest is partially explained by Professor Böhm-Bawerk's theory of the present worth of future goods.

But the fundamental problem remains: Why does not capi-

* "Capital and its Earnings," *Publications of the American Economic Association*, vol. III. No. 2.

tal, constantly increasing by the addition of economic interest, become so abundant that loan interest must fall to zero? No demonstration of the predominant strength of the desires for immediate gratification is an adequate solution of this problem. It calls for a study of *the cost of production of capital*.

Without further preliminary, I will offer a few propositions, the full discussion of which must be reserved for another time.

(1) The fact on which a scientific theory of capital and interest must be based is that of the increasing irksomeness and diminishing productiveness of labor when continued beyond a certain point. The relations of causation are as follows:—

(2) Subsistence for to-morrow can be produced only after subsistence for to-day has been obtained.

(3) Therefore, it costs more than twice as much to produce to-day subsistence for two days (or one day's subsistence and one day's capital) than to produce to-day subsistence for one day only.

(4) When surplus wealth has been created, it must be saved,—be actually devoted to productive functions,—to become capital. Saving necessitates a further prolongation of decreasingly productive labor, if any immediate gratifications in addition to subsistence are to be enjoyed. That is, not only must wealth, in addition to immediate subsistence, be created, but, this surplus being converted into capital, a further fund must be created for immediate enjoyments. Individuals may do without immediate enjoyments; but not all individuals may if capital is to increase continuously in amount, since without immediate enjoyments there would be no use for wealth in excess of subsistence, and no need to increase capital beyond the amount necessary to maintain subsistence. Saving, therefore, considered as cost, resolves into the prolongation of increasingly irksome and decreasingly productive labor.

(5) Consequently, *capital has a higher cost of production than has produce for immediate consumption*, because all wealth, in addition to subsistence, is necessarily created by labor already weary from the effort of creating produce for immediate consumption, and because the conversion of surplus wealth into capital by saving involves a further prolongation of the diminishingly productive labor.

in which trades-union influence is strong, the real facts are disclosed in the customary payment of an extra rate per hour for overtime work.

In short, no way has ever been discovered whereby capital can be created except by working additional hours of increasing weariness and diminishing productiveness after immediate subsistence has been won. Capital itself, once created, increases the productiveness of such additional labor; and therefore the rate of loan interest tends towards a minimum.

When individuals in accumulating capital do without immediate enjoyments, saving is an exchange of present goods for future goods. Considered as a part of the cost of production of capital, saving here becomes that difference between the future value and the present worth of future goods on which Professor Böhm-Bawerk rests his theory of loan interest. Following out the foregoing line of thought, may we go beyond the psychological data as assumed by Professor Böhm-Bawerk, and resolve it into strictly economic facts? Why is the present worth of future goods less than the value of an equal quantity of similar goods ready for immediate consumption? To a considerable extent, future goods can be made present goods by extra labor. The coat that was to be done in a fortnight can be made ready in two or three days by prolonged labor at night. If great stocks of cotton prints were destroyed by fire, the market would be quickly replenished by overtime labor. Why, then, the low present worth of future goods? Obviously, because of the abnormal cost of making them present goods. To the full extent that a shortening of the period of production is possible, future goods have a low present worth as compared with present goods solely because of the additional cost of doing to-day what would be done more easily and naturally to-morrow; and this additional cost is the normal measure of the difference between the future value and the present worth of future goods.

FRANKLIN H. GIDDINGS.

BRYN MAWR COLLEGE.

THE LATE COPPER SYNDICATE.

Beginning in October, 1887, a bevy of French speculators manipulated in copper one of the most gigantic and long-lived corners yet recorded. It lasted nearly eighteen months, and during its continuance impressed upon the commodity in all the markets of the world a purely arbitrary price. So notable an economic phenomenon deserves to be registered and studied.

The enterprise originated with M. Secretan, head director of the Société Industrielle et Commerciale des Métaux, which for short we shall call the Metal Company. It was a manufacturing corporation, consuming more copper than any other establishment on the Continent; and its first purchases were simply for its own use, to utilize the extraordinarily low price of £39 per ton. But, witnessing the swift advance caused by their own act, and encouraged by a most successful venture in tin, M. Secretan and his associates proceeded to buy all the visible stocks of copper, to hold for a rise. It seemed a propitious time. Consumption was advancing upon production. The total copper in Europe and afloat on October 31, 1887,—namely, 48,503 tons,—was less by 14,324 tons than it had been a year before, with some prospect, not destined to be quite realized however, that the world's production for the year would fall below that of 1886, as this had below that of 1885.

YEARLY PRODUCTION OF COPPER, TONS.

1887	1886	1885	1883	1879
224,373	216,936	226,892	181,622	151,963

The then existing tendency to a decline in the apparent stock is more perfectly exhibited in the following:—

COPPER IN EUROPE AND AFLOAT, 1887.

End of January, . . .	63,390 tons.	End of June, . . .	50,947 tons.
February, . . .	59,546	July, . . .	51,972
March, . . .	Same	August, . . .	53,356
April, . . .	56,172	September, . . .	46,176
May, . . .	54,770	October, . . .	48,503

The course of prices during 1887 down to October 8 is shown by the following:—

LONDON PRICES OF COPPER, 1887.

	£ s. d.		£ s. d.
January 7,	30 10 0	June 4,	30 5 0
February 4,	30 13 9	July 2,	40 1 3
March 5,	30 6 3	August 6,	30 13 9
April 2,	30 12 6	September 2,	40 3 9
May 6,	30 3 9	October 3,	30 17 6

The average prices for the first days of the months had been, for 1879, £57 11s.; for 1882, £67 0s. 6d.; for 1885, £44 1s. 6d.; for 1886, £40 6s. For the whole year 1887, this figure was £42 3s. As one would expect from these statistics, copper speculators were selling short, or, in the London *Economist's* statelier phrase, "operating for the fall."

M. Secretan's scheme required him of course to make terms with the American copper producers, from whom the world expected about 40 per cent. of its annual supply. The next most important engagement entered into was with the great Rio Tinto Company, owning in the Province of Huelva, Spain, the most lucrative copper property in the world. A contract was also arranged with the two Cape copper companies, the *Société* covenanting to take their entire output for three years at £70 a ton, 15 cents a pound, giving them the option of renewal at the end of that period. The American mine-owners, except Mr. Haggin of the Anaconda, were to receive, for three years, £61 10s. per ton, or about 13 cents a pound, with half profits on prices realized over this; the Spanish, for two years, £65, or 14 cents. With the Anaconda interest, no permanent arrangement was made till early in 1889, but instead two contracts, of six months each, covering 1888, averaging £68 10s. the ton. The height of these prices, doom-ing the scheme beforehand, was due to the rise which the Metal Company's own buying had started.

The company thus put in control of from 80 to 85 per cent. of the world's copper product had a capital of £1,000,000; but of this it controlled unencumbered not over £120,000, £800,000 having been raised on debentures, and the rest gone for its building and the good will of the firms it succeeded. M. Secretan, therefore, through M. Denfert-Rochereau, one of the Metal Company's directors, appealed for financial support to the Comptoir d'Escompte, of which this gentleman was man-

£120,000 was set apart for a dividend of 12 per cent. M. Secretan, whom rotation should have retired from the management, was re-elected amid the utmost enthusiasm. The capital stock was doubled by the issue of 50,000 new shares of £20 (500 francs) each, at £30, or a premium of 50 per cent., all subscribed by old holders, who were given priority. Before this, the shares, par 500 francs, had been worth 1,220 francs; and they stood at 900 francs even after the new were out, continuing at about the same figure till December, 1888. On the following March 28, they were at 30 francs, and the debentures of 500 francs a share, at 75.

Already the piling up of copper was ominous. The Comptoir was driven to a further 20 per cent. call, though guaranteeing at the same time a £3,120,000 contract with Rio Tinto. By May 31, 1888, the Comptoir's effective advances amounted to £5,554,000, of which £1,124,000 were unsecured. At the end of June, it had to ask the syndicate's permission to pledge some of the latter's warrants held by it, as a basis for loans at the Bank of France and elsewhere. The last of July its unsecured advances had risen to £2,820,000, by the end of October to £2,780,000, at the end of the year to £3,480,000, the total quantity now footing up £6,880,000. It would at this time have refused to go further, had not M. Secretan declared that such a stand must bring instant collapse.

What, meantime, had been the statistical history of copper? The syndicate could not have bought during 1888 less than 160,000 tons out of a world production of 260,000, nor paid less than £9,000,000 therefor. The copper in Europe and afloat had increased, according to the elaborate estimate of the New York *Engineering and Mining Journal*, by a total output for 1888 of over 250,000 tons against only 225,000 for 1887, the bulk of the addition being due to the United States, which produced 105,350 tons, or 27½ per cent. more than in 1887. The increase in the Lake Superior district was about 15 per cent.; that in Montana, 25. The output of Anaconda alone reached 23,000 tons, a quantity which only Rio Tinto exceeded. In England and France, the supplies for 1888 nearly doubled the deliveries. The visible supply for Europe at the end of 1888 was 104,000 tons against 42,000 twelve

authorities place the difference at 20,000 tons, making the true deficit in consumption for 1888 about 19,500 tons. India took in 1888 13,400 tons less than in 1887; and the total export from England, considering as not exported the stock held in bond in France, but belonging in Liverpool, was 27,723 tons.

With the opening of the present year, the syndicate's woes became pronounced. Sellers in open market began giving a preferential rate of £1 a ton to other buyers. For a time these sold again to the syndicate, pocketing the goodly advance; but at length would not risk this, and gave up buying. February 1 saw the syndicate under a load of 150,000 tons of copper, which, to be whole, it must sell for £68 per ton. The able and exhaustive report of the world's copper production for 1888, published by the *Engineering and Mining Journal* of January 12, dissipated hope of securing such a price. At the end of January the syndicate ceased to buy futures, and on March 1 to buy at all.

In January, the Comptoir d'Escompte borrowed £840,000 for the Metal Company. On February 5, it parted with warrants amounting to £1,520,000, that the Metal Company itself might float a loan of £1,000,000. During this month, with much difficulty, a Société Auxiliaire des Métaux was formed, to relieve the old. It had 8,000 shares of £200 each, few subscribing who were not interested already. The Metal Company alone took 60 per cent. of the stock, the Comptoir 1,000 shares. Nearly all the clear aid came from Swiss banks and bankers, who accepted 450 shares. The new concern was to have become responsible for 75,000 tons of copper at £72 a ton,—a great relief. But by no means this amount was ever transferred.

The whole capital of the Comptoir was now locked up in copper, whereof £2,713,000 worth would vanish into air, should the metal, as seemed imminent, drop to £40 the ton; while it also stood pledged for payment on 320,000 tons of futures. On March 5, M. Denfert-Rochereau, who had involved the institution against the earnest opposition of its conservative directors, committed suicide. A furious run on the bank, kept up for the next two days, drained away its entire deposit, it being saved from closing its doors only by a loan of £4,000,000 from the Bank of France.

2. Men of business, at least in France, are not infallible. It should have been certain beforehand that the copper "combine," so rickety, with no power, as genuine trusts have, to limit production, could not permanently continue prices thus excessively above the normal level. Stronger organization, less greed, or death,—these were the alternatives. There is no evidence that M. Secretan and his confidants canvassed the possibilities of copper production with any care. To the real causes of the rise when they began buying, or to the effect thereof on disused and poor mines, their eyesight did not reach. The myopia spread to some of the world's greatest financiers. And whence, at last, came the awakening vision? Apparently not from mercantile thinkers, least of all from men pecuniarily interested in the speculation. The facts indicate that, more than aught else, the searching and unanswerable *exposé* of copper affairs by the *Engineering and Mining Journal* last January 12 brought it. Such advised, fearless, and disinterested criticism of industrial problems cannot be too strongly commended. Sycophancy and passion are in these discussions peculiarly out of place.

3. We see, again, the power of irresponsible capital, when massed and unscrupulously used. The copper combination was one of the very loosest order; yet, defying the economic harmonies, it for almost a year and a half kept the price of a world commodity not far from 100 per cent. above what it would naturally have been. For the United States, the arbitrary advance was not so great as this; but, according to the sober estimate of the *Journal* just referred to, it was at least 5 cents on each of the 250,000,000 pounds of our copper bought by the syndicate, making a \$12,500,000 increase "in the value of our copper production and stock over a normal figure." Of this, the American copper producers got, in unearned profits, \$8,000,000,—\$2,000,000 from the syndicate (virtually an export duty on the copper sent to Europe) and \$6,000,000 from the pockets of the American consumers of copper. Losses through interruption to business and the painful retardation of electrical science we can only mention. "Vengeance has come," it is said. But vengeance is not restitution. Nothing has occurred or can occur to redress the

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